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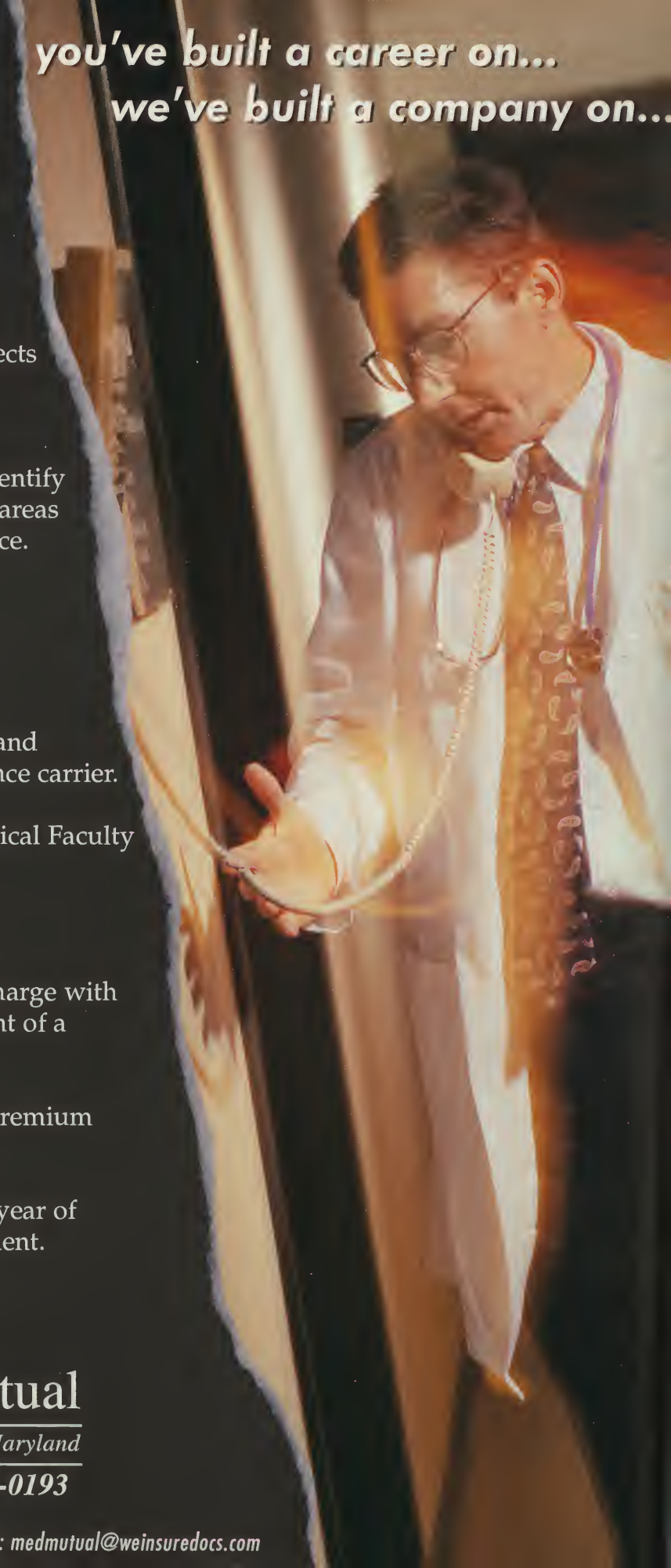
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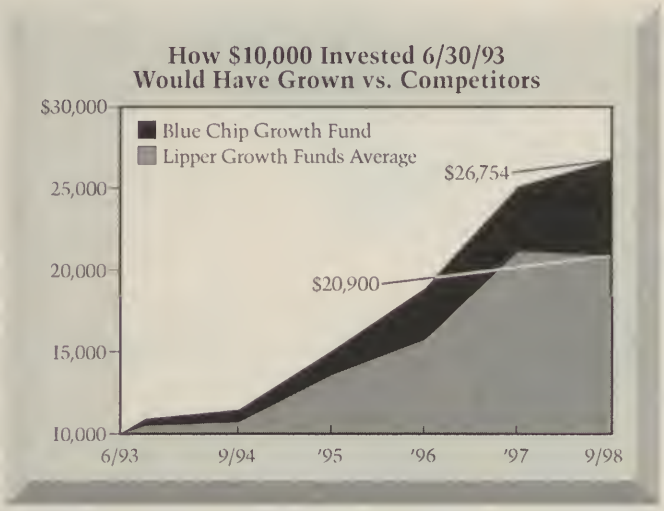
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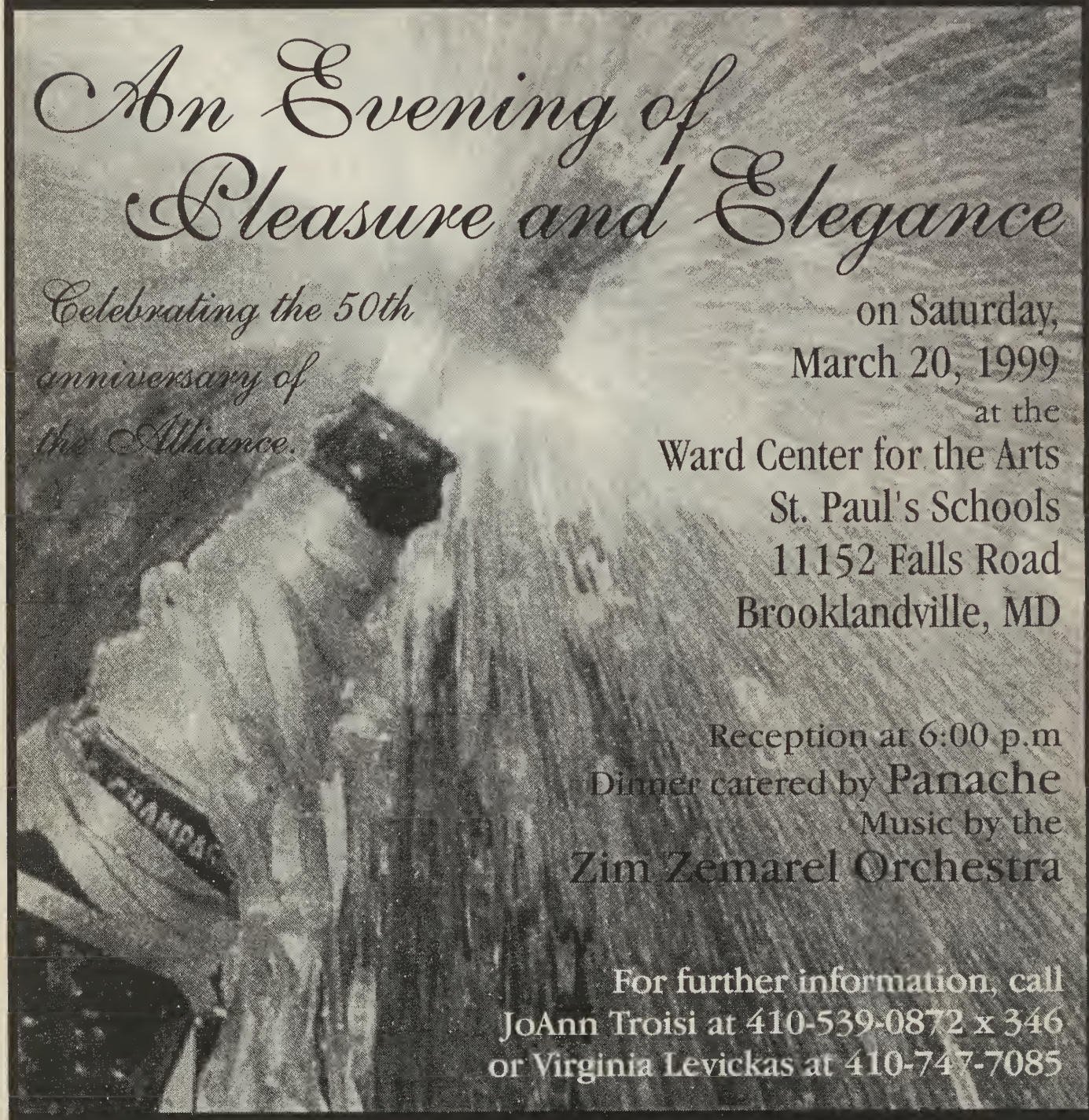
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LETTERS TO THE EDITOR

Was DiGeorge's syndrome considered in the setting of conotruncal congential cardiac defects?

I read with interest your article in the *Maryland Medical Journal* entitled "A 66-year-old-woman with pneumonia and right heart failure" [1998;47:177-181]. I noticed the differential WBC count was remarkable for a lymphocyte count of 0, implying an equivalent CD4 count. While this finding would immediately suggest the possibility of HIV disease, in the setting of conotruncal congenital cardiac defects such as described in your article, the diagnosis of DiGeorge's syndrome comes to mind. Has this possibility been evaluated in the work up of this patient?

Daniel Alexander, M.D.
Dr. Alexander is from the department of internal medicine, Franklin Square Hospital. ■

Patient did not share the associated facial dysmorphism associated with DiGeorge syndrome

Dr. Alexander has astutely commented on an association between lymphopenia and congenital conotruncal abnormalities, known as the DiGeorge syndrome. DiGeorge originally described infants with hypocalcemic seizures, severe infections, and deficient cell mediated immunity with the absence of the thymus and parathyroid glands. While there are wide variations in both the clinical and immunological manifestations, the DiGeorge syndrome is also associated with cardiovascular abnormalities, including aortic interruption and truncus arteriosus, as well as facial dysmorphism characterized by hypertelorism, micrognathia, a small "fish-like" mouth, a small philtrum, a malformed nose, bilateral cataracts, and a high arched, or cleft, palate.[1]

Anomalies of pulmonary venous return and atrial septal defects are not characteristic cardiac malformations associated with the DiGeorge syndrome, and our patient did not share the associated facial dysmorphism described above, therefore making the DiGeorge syndrome less likely.

In addition, we are privy to one item that Dr. Alexander did not have access to – the rest of the patient's hospital chart – which shows that lymphopenia was recorded only on the day of admission, and therefore may not truly be representative of the patient's immunological health.

We greatly appreciate Dr. Alexander's interesting comments.

Nathan H. Carliner, M.D.
R. Michael Benitez, M.D.
Drs. Carliner and Benitez are with the University of Maryland School of Medicine, division of cardiology.

1. Perloff JK. The Clinical Recognition of Congenital Heart Disease, Fourth Edition. W.B. Saunders Company: Philadelphia, PA; 1994. ■

MARYLAND MEDICINE in review

Safuh Attar, M.D., John V. Conte, Jr., M.D., and Joseph S. McLaughlin, M.D., published an article entitled Primary Cardiac Tumors in *The Journal of the Pennsylvania Association for Thoracic Surgery* (1998;6:34-38). The authors review 38 patients with a rare diagnosis of primary cardiac tumors. They find that while malignant tumors have a very serious prognosis, excellent surgical results are seen with the benign tumors. Drs. Attar, Conte, and McLaughlin are from the University of Maryland School of Medicine and Medical Center.

Hugh Calkins, M.D., is the lead author of a study suggesting that radiofrequency catheter ablation is safe and beneficial as a nonsurgical treatment for rapid heart rhythms in both children and adults. The study was published in the January 19, 1999, issue of *Circulation*. Researchers looked at 1,050 patients over a three-year period. Reviewing three types of catheter ablations, authors report a high success level, low recurrence rate, and low rate of major complications. Dr. Calkins is director of electrophysiology at the Johns Hopkins Medical Institutions.

Austin Doyle, M.D., recently published an article showcasing a discovery that may boost the effectiveness of chemotherapy. The article was published in the December 22, 1998, issue of *Proceedings of the National Academy of Sciences*. The researchers found "a cancer resistance protein that rapidly pumps out chemotherapy from a certain line of breast cancer cells." They call the newly discovered pump the Breast Cancer Resistance Protein. This discovery may answer the problem of drug resistance, a major problem for many cancer patients. Dr. Doyle is associate professor of medicine at the University of Maryland School of Medicine.

Stuart C. Ray, M.D., is one of the authors of a report published in the January 1999 issue of the *Journal of Virology* revealing new gene variations of HIV. The report, a joint effort between scientists at Johns Hopkins and in India, shows that different forms of HIV in India seem to be combining. The authors conclude that this may be an indication that current approaches to vaccine development need to be revisited. Dr. Ray, who directed the U.S. arm of the study, is from the Johns Hopkins Medical Institutions.

Stephen S. Gottlieb, M.D., is lead author of a study finding that beta-blockers improve survival after a heart attack regardless of age or medical condition. The study, published August 20, 1998, in the *New England Journal of Medicine*, found that in over 200,000 patients beta blockers improved the two-year survival by 42%. Authors conclude that their findings should prompt physicians to prescribe beta blockers on a routine basis for all patients who have a heart attack. Dr. Gottlieb is director of the cardiac care unit at the University of Maryland Medical Center.

Michael Levine, M.D., and colleagues published an article in the December 1998 issue of the *Journal of Clinical Endocrinology and Metabolism* reporting on a new monitoring technique for thyroid cancer. Because current monitoring techniques have been found to cause anxiety and illness in patients as well as a slight risk of accelerating tumor growth, a new method to detect left-over thyroid cells was sought. Researchers discovered that a blood test can show, with an extreme level of sensitivity, circulating thyroid cells. Dr. Levine is from the Johns Hopkins Medical Institutions. Other Hopkins researchers were Matthew D. Ringel, M.D., and Paul W. Ladenson, M.D.

PHYSICIANS INTERESTED in being included in Maryland Medicine in Review should send a photocopy of their recently published articles (including journal citation) to:
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Long-term functional results after manipulation of the frozen shoulder

Jerome P. Reichmister, M.D., and Steven L. Friedman, M.D.

Dr. Reichmister is chairman, department of orthopaedic surgery, Sinai Hospital, clinical associate professor, orthopaedic surgery and medicine, University of Maryland, and clinical instructor, orthopaedic surgery, Johns Hopkins. Dr. Friedman is director of hand surgery, Sinai Hospital, and clinical instructor, division of orthopaedic surgery, University of Maryland.

Reprints: *J.P. Reichmister, M.D., 6080 Falls Rd., Baltimore, Maryland 21209.*

ABSTRACT: *The use of shoulder manipulation in the treatment of frozen shoulder syndrome remains controversial. Opponents cite the risk of dislocation, fracture, nerve palsy, and rotator cuff tearing as limiting the usefulness of manipulation. A retrospective study of 38 shoulder manipulations in 32 patients was performed. These patients were followed for an average time of 58 months. The patients were examined in follow up for combined shoulder range of motion, external and internal rotation strength, and status of the long head of the biceps. Manipulation was performed in all patients by the senior author and supervised physical therapy was begun within 24 hours of the manipulation. The average recovery time was 13 weeks.*

In this series, 97% of patients had relief of pain and recovery of near complete range of motion, although 8% required a second manipulation to obtain a successful result. Mild weakness to manual muscle testing was present in 5.3% of patients in external rotation and 10.5% of patients in internal rotation. There was no deterioration of shoulder function with time. In fact, most patients improved with passage of time, even more. There was no evidence of biceps tendon rupture or rotator cuff insufficiency at the time of follow up in any of the patients. No fractures, dislocations or nerve palsies were observed, although one patient who had no premanipulation arthrogram was found to have a rotator cuff tear a few months after failed manipulation. Manipulation of the shoulder can therefore be offered to reduce the pain and period of disability in patients who fail conservative treatment of frozen shoulder syndrome.

Frozen shoulder describes a clinical syndrome characterized by disabling shoulder pain, often worse at night, and limitation of motion. Despite several valuable investigations into the nature of this syndrome, its etiology remains unknown[8,9,10,11,12,20,23,29,30] and its treatment controversial.[4,5,10,18,21,29] Treatment options include observation alone,[2,5] physical therapy,[2,4,5,32,33] oral[4] or locally injected[5] corticosteroids, closed manipulation,[13-17] stellate ganglion block,[22] arthroscopy,[26,28,34] brisement, and arthrotomy with release of contracted structures under direct visualization.[8,10,18,21,29] Recently, others have talked about arthroscopic release of contracted structures.[34,35] Perhaps the most controversial treatment is closed manipulation.[18]

There are currently no controlled prospective studies documenting the efficacy of manipulation of the shoulder in treating this disorder. Several retrospective reviews, however, suggest that the duration of symptoms may be reduced by this treatment.[13-17] The opponents of manipulation suggest that the risks of rotator cuff tear, humeral fracture, shoulder dislocation, and nerve palsy, limit its usefulness in this disorder.[10,18,21] A retrospective analysis was undertaken to evaluate the role of manipulation in the treatment of frozen shoulder syndrome in terms of pain relief, return of motion, complications and long-term function.

Materials and methods

Thirty-eight shoulders in 32 patients were evaluated in this study. The diagnosis of frozen shoulder syndrome was made in all patients based on the presence of severe shoulder pain and limitation of motion. Arthrography was performed on nine shoulders in nine patients. All arthrograms confirmed the diagnosis by demonstrating reduced volume within the capsule.

The medical records of all patients were reviewed with particular attention to age, sex, arm dominance, duration of symptoms, range of motion, associated illness, and contralateral shoulder symptoms. All patients were examined in follow-up for combined shoulder range of motion, external and internal rotation muscle strength, and evidence of rupture of the long head of the biceps.

Table 1. Associated illnesses

	Number of patients	Percent
DJDCervical	13	41
Lumbar	3	9.5
Cardiac Disease	7	22.5
Diabetes	2	6
Thyroid Disease	2	6
Hydradenitis	1	3
Recent Trauma	2	6
Rheumatoid Arthritis	1	3
Other	1	3

The incidence of associated illnesses in the study group is shown. These should be considered by the treating physician when evaluating shoulder pain.

Twenty-six patients (81%) had associated illnesses (**Table 1**). Cervical spine disease was present in 13 patients. Diabetes mellitus was present in two patients, cardiac disease in seven patients, thyroid disease in two patients, and a history of recent minor trauma was present in two patients. One patient had undergone resection for an axillary hidradenitis of the ipsilateral extremity seven months before presentation.

Treatment before manipulation included supervised physical therapy, non-steroidal anti-inflammatory agents, and corticosteroid injections of the involved shoulder. The average duration of physical therapy before manipulation was 12 weeks, although several patients had previous regimens of variable duration prior to the initial consultation. The distribution of conservative therapies is documented in **Table 2**.

Patients were considered candidates for manipulation if their symptoms failed to respond to conservative therapy as shown in Table 2. In addition to severe restriction of motion, moderate restriction of motion associated with severe pain was considered an indication for manipulation.

Manipulation was performed under general anesthesia with total relaxation (paralysis) in all patients. The lever arm on the proximal humerus was minimized to prevent humeral fracture. Internal rotation was performed first followed by external rotation. Careful abduction and finally forward flexion were then performed. Adduction was last performed to break down posterior joint capsule adhesions. All motions were repeated until maximum motion was obtained. After manipulation, interarticular injection of steroid (decadron 4 mg) and local anesthetic (lidocaine 1%) was performed. An aggressive supervised physical therapy regiment was initiated within 24 hours

Table 2. Conservative treatment

		Number of shoulders	Percent
Physical Therapy		36	95
Non-steroidal anti-inflammatory drugs		29	76
Injections	One	19	50
	Two	2	5
	Three	2	5

The distribution of patients undergoing conservative treatment is shown.

of manipulation. Early in the series, most patients were treated on an inpatient basis to facilitate immediate physical therapy. More recently, outpatient manipulation and therapy have become necessary because of third-party reimbursement restrictions. Supervised physical therapy directed at pain reduction and range of motion exercises was continued until maximum motion was achieved and maintained.

Table 3. Mean total shoulder motion (degrees)

	ABD	FF	IR	ER
Presentation	97	111	32	12
Completion of care	171	171	60	26
Follow-up	171	171	84	78

The mean range of motion is shown at presentation, completion of care, and final follow-up.

ABD = abduction; FF = forward flexion; IR = interal rotation; ER = external rotation

The criteria for a successful result included a complete or near complete relief of pain and restoration of complete or near complete range of motion.

Results

The study group consisted of five males (16%) and 27 females (84%) with an average age of 54 years at presentation (range, 33 to 69 years). Follow up ranged from nine to 174 months with a mean of 58 months. Manipulation was performed on 22 left (58%) and 16 right (42%) shoulders. Sixteen dominant (42%) and 22 nondominant (58%) shoulders were affected. The duration of symptoms before manipulation averaged 29 weeks.

The average range of combined shoulder motion at presentation, at the time of discharge from care, and at follow up are presented in **Table 3**. The recovery time was defined as the time from manipulation until the patient was discharged from care for frozen shoulder syndrome. Average recovery time in this series was 13 weeks (range, 2 to 56 weeks).

Persistent, disabling pain was present in the patients with only moderate limitation of motion as is evident in Table 3. Most patients reported significant sleep disturbance related to pain.

Thirty-four shoulders in 28 patients responded successfully to a single manipulation. The improvement in shoulder motion at the time of discharge from care did not deteriorate with time as is shown in Table 3. T-tests performed on the study group revealed a statistically significant improvement in shoulder abduction, forward flexion, and external rotation at the time of discharge from care ($p<.0005$), which did not deteriorate at the time of follow up. Similarly, a statistically significant improvement in internal rotation was observed at the completion of treatment ($p<.001$), which did not deteriorate by the time of follow up ($p<.0005$).

Three shoulders in three patients required a second manipulation to obtain a successful result. One patient who failed to demonstrate improvement of pain within three months of manipulation was found to have a rotator cuff tear by arthrography. Subsequent subacromial decompression and cuff repair resulted in an excellent function result. One patient developed recurrent mild shoulder pain approximately nine months after manipulation that does not require treatment at this time. One patient developed an impingement syndrome two years after manipulation and was treated successfully by subacromial decompression.

Internal and external rotation, manual muscle testing was performed on all patients to evaluate rotator cuff function. Documentation of muscle testing at the time of initial presentation was inconsistent due to patient discomfort and variability in recording. Complete muscle testing data is therefore present only at follow up. External rotation muscle strength was full (5/5) in all but two shoulders in two patients (5.3%) in which good strength (4/5) was present. Internal rotation strength was full in all patients but four (10.5%) who had good strength (4/5) **Table 4**. No statistically significant correlation was observed between muscle weakness in age, sex, duration of symptoms, or associated illness. It was noted, however, that one patient with residual weakness had rheumatoid arthritis; one had undergone subacromial decompression two years after manipulation and one had undergone previous anterior cervical discectomy and interbody fusion. Physical examination follow up revealed no evidence of rupture or tenosynovitis on the long head of the biceps.

Contralateral shoulder disease was present in 20 patients (63%). Subacromial bursitis in the contralateral shoulder required treatment in two patients (6%). Pain and limitation was present bilaterally in 18 patients (56%). Twelve of these patients responded to conservative measures alone in the contralateral extremity whereas six patients underwent bilateral shoulder manipulation. Three patients undergoing bilateral

Table 4. Manual muscle testing

	4/5	5/5
Internal Rotation	4 (10.5%)	34 (89.5%)
External Rotation	2 (5.3%)	36 (97.7%)

The results of manual muscle testing demonstrates the functional integrity of the rotator cuff.

manipulation had simultaneous procedures and the other three had manipulations separated by three, six and seven years respectively.

Discussion

The etiology of frozen shoulder remains elusive despite many thorough investigations into the subject.[8,10,12,19,20,23] Both local[8,10,12,20,23,29] and systemic factors[6,7,11,20] have been implicated in this disorder. De Palma[10] and Neviaser[23] both demonstrated thickening and contracture of the shoulder capsule as well as intracapsular adhesions. Neviaser[23] first coined the term "adhesive capsulitis" and described the value of arthrography in distinguishing adhesive capsulitis from other causes of shoulder pain and stiffness. Arthroscopic examination of the frozen shoulder has demonstrated capsular contraction, synovitis, obliteration of the subscapularis bursa, and adhesions or contracture of the inferior capsular recess.[26,28] Other authors have implicated tenosynovitis of the long head of the biceps[10,30] as well as tendinitis and attritional disorders of the rotator cuff.[8,20] Most recently, Ozaki, et al,[29] attributed this disorder to the obliteration to the rotator interval with progressive contracture of the coracohumeral ligament. Autoimmune mechanisms,[6,7,20] emotional factors,[9] systemic infections,[11] and endocrine abnormalities[22] have all been implicated with little or no supporting evidence.

The literature concerning the treatment of frozen shoulder syndrome is very controversial. Currently, the most uniformly accepted forms of aggressive treatment include brisement, manipulation, and arthrotomy or arthroscopy with contracture release in patients who fail to respond to medical management and physical therapy. The aforementioned theories imply that the natural history of frozen shoulder syndrome can be favorably affected by manipulation. Hill and Bogumill reported that 75% of their patients had maintained a painless, full range of motion of the shoulder at the time of follow up which averaged 22 months. They stated that manipulation can shorten the duration of symptoms in the frozen shoulder syndrome and reduce disability. The average time from manipulation until discharge from care was 12.5 weeks. In our series, mild weakness was found in 5.3 % of patients in external rotation and 10.5% of patients in internal rotation. One patient was found to have a rotator cuff tear three months after unsuccessful manipulation. Unfortunately, the status of this patient's rotator cuff was not documented before manipulation. No other patients in this series demonstrated evidence of rotator cuff insufficiency or tear of the long head of the biceps. No other complications related to manipulation were identified in the study group.

The present study demonstrated 97% success after manipulation of the shoulder for frozen shoulder syndrome. None of these patients showed any evidence of deterioration of function or recurrence of significant pain during the average follow up of 58 months. Three shoulders required a second manipulation to obtain a successful result. No evidence of rotator cuff insufficiency or biceps tendon pathology was present at the time of follow up.

Conclusion

In absence of a controlled, prospective clinical trial, the efficacy in the treatment of frozen shoulder syndrome cannot be proven. The current theory does support the contention, however, that manipulation does decrease the duration of symptoms and disability based on the studies in the natural history of frozen shoulder syndrome.[2,5,14,15,19] This review demonstrates that shoulder manipulation is associated with a very low incidence of complications when carefully performed. The results of the present study demonstrate a significant improvement in shoulder motion after manipulation, as well as consistent relief of pain and secondary sleep disorders. Furthermore, if injury to the rotator cuff or biceps tendon does occur during manipulation, no significant functional disability could be demonstrated at long-term follow up of these patients. Manipulation of the frozen shoulder can therefore be offered to patients with frozen shoulder syndrome who fail to respond to more conservative treatment.

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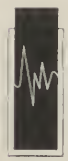
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The challenges of cardiac pacing: an illustrative case

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ABSTRACT: *The history of transvenous pacing encompasses the past five decades. Multiple lead complications have been described, including problems related to central venous access, venous thrombosis, extravascular bleeding, lead and pacemaker pocket infections, lead fractures, lead dislodgment, lead perforation, diaphragmatic pacing, and chronic lead threshold changes.*

Potential solutions to these problems have included: improvements in lead composition and tip technology, multiple pacemaker lead and generator insertions, alternative lead sites, pacemaker lead extenders, extraction of infected leads, multiprogrammable pacemaker generators, high output generators, antibiotics and anticoagulants, and venous reconstruction.

This case illustrates complications and solutions over a 20-year period. The indications for temporary transfemoral and permanent iliac vein transvenous pacing are reviewed, including a new indication for the iliac venous approach.

Case report

A 76-year-old man first presented in 1977 with symptomatic AV block. A Cardiac Pacemakers Inc. (CPI) VVI pacemaker was implanted via the right subclavian vein lead placement.

The pulse generator was replaced with a CPI 0623 pulse generator in August 1983 because of battery depletion. A new ventricular lead was also

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placed because of diaphragmatic pacing noted with the old endocardial lead, which could not be removed and was therefore capped. Inflammation of the pacemaker pocket occurred within four weeks; aspiration of the pocket was culture negative. The pocket was reopened four weeks later, and the generator was moved under the pectoralis muscle. Eight months later a draining sinus occurred, with positive cultures for *Staph epidermiditis*.

In August 1984 the pulse generator and second ventricular lead were surgically removed; the first wire was cut and retracted into the superior vena cava (SVC). An epicardial lead was placed by thoracotomy, and a Medtronic 8420 generator was placed in a left upper quadrant abdominal pocket. The patient experienced post-thoracotomy syndrome with fever and pericardial rub; blood cultures were negative.

Five months later the patient developed dyspnea, severe neck swelling, and fever. Pulmonary embolism was diagnosed. A venogram showed bilateral subclavian vein thrombosis and SVC syndrome, which was treated with IV heparin and Coumadin.

In February 1987 intermittent noncapture of the pacemaker was noted; the generator was reprogrammed.

In July 1988 the patient experienced a syncopal episode. A high chronic epicardial threshold was documented, and a high-output CPI generator was placed.

In March 1989 the patient developed pacemaker syndrome with dizziness, hypotension, and congestive heart failure. He underwent reconstruction of the SVC with a Gortex graft, along with implantation of new atrial and ventricular epicardial leads. A Medtronic AV generator was connected via tunneled connectors in the abdominal pocket.

In April 1991 intermittent noncapture was again documented due to high pacing thresholds and impending battery depletion. At this time the patient came under our care. A new Medtronic endocardial ventricular lead model 4003 was placed via the right iliac vein, along with a new CPI generator model T 446, placed in a right upper quadrant pocket (**Figure 1**). Pacing thresholds remain less than 1 millivolts (mV) six years later.



Figure 1.

Discussion

The art of pacing will reach 50 years of age by the year 2000. Many physicians and biomedical engineers have contributed wonderful innovations and improved technological advances including microcircuitry, multiprogramming, and battery longevity. In the realm of lead technology, we have learned the advantages of silastic over urethane coatings and endocardial over epicardial lead placement, specifically ease, safety, and long-term reliability. Lead extenders and long leads have obviated problems related to pectoral pockets and have been useful in tachy/defib pacing.

The role of femoral and iliac vein pacing has been less well defined. Cheng[3] described temporary percutaneous femoral vein pacing for acute heart block related to acute myocardial infarction. Femoral pacing was easily performed, and allowed for future access to both subclavian veins for permanent pacing leads. Prophylactic use of intravenous heparin was recommended for prevention of thromboembolism.

Permanent pacing via the iliac vein approach was first described by Ellestad in 1980.[2] Indications included: thin chest wall, making adequate pocket space impractical; prior mastectomy; inability to gain access to either subclavian vein; and cosmetic reasons. This case illustrates another indication for this approach: multiple problems related to bilateral venous obstruction and prior pacemaker pockets and subclavian leads. This case is unusual, encompassing seven generators, seven leads, and SVC reconstruction. Nevertheless, with increasing numbers of generator and lead replacements over time, the need for alternative lead placement may be anticipated.

Several technical aspects of iliac vein pacing deserve emphasis. The vein insertion site 1 cm above the inguinal

ligament, but below the femoral ligament, allows for greater lead stability and less likelihood of migration into the inguinal area. The 2 cm cutdown over the insertion site allows for easier cannulation of the iliac vein, and obviates potential arterial or nerve damage. The 180-degree loop at the insertion site must be sufficient to prevent lead fracture.

In 1989 Ellestad and French[4] presented a nine-year follow-up of 90 patients who had received permanent pacing via the iliac approach, including short-term and long-term complications. Their data included 28 cases of atrial pacing, 53 cases of ventricular pacing, and 14 cases of AV pacing. The most frequently reported complication was lead dislodgment, occurring in 21% of atrial leads and 7% of ventricular leads. Even with newer screw-in leads the dislodgment rates were 11% and 5%, respectively. By comparison, dislodgment rates from the standard subclavian vein approach have ranged from 2% to 9% in the atrium [2,5] and 0% in the ventricle.[6] The angle of entry from the iliac approach may account for the high rate of dislodgment.

The issue of venous thrombosis and bleeding related to pacemaker leads has received insufficient attention. Ellestad reported two cases (2%) of acute retroperitoneal bleeding after iliac vein lead insertion.[2] Neither required surgical remedy. Chronic partial or complete thrombosis of the subclavian vein due to pacemaker leads, however, is surprisingly common, occurring in up to 25% of reported series.[7] It is often unrecognized, due to sufficient collateral flow to the SVC. Ellestad was pleasantly surprised that superficial phlebitis occurred in only one case (1%) of iliac vein pacing. Nevertheless, prophylactic anticoagulation with Heparin or Coumadin was not recommended after pacemaker lead implantation.

The worst form of subclavian vein thrombosis—SVC syndrome—is extremely rare after pacemaker insertion. Two cases were reported by Chamarro et al.[8] One case occurred after original lead implant in a patient with prior malignancy and chest irradiation, the other case in a patient with multiple generator replacements. Our patient had required multiple endocardial leads, placed six years apart. A post-thoracotomy syndrome had occurred four months before the onset of SVC syndrome. Extraction of old, unused pacer leads is often impractical, because of distal fibrosis of tined leads, and/or proximal fibrosis/thrombosis at the lead insertion site in the subclavian vein. Percutaneous sheath lead extractors were not available at the time of our patient's experience. Extractors are most commonly used for removal of infected endocardial leads. However, we have experienced one atrial perforation requiring thoracotomy after percutaneous lead extraction.

IV Heparin and oral Coumadin were adequate treatment of the SVC syndrome in all cases. Our patient had also received a subclavian-SVC reconstruction graft, which was performed four years after the SVC syndrome.

The incidence of lead fracture following chronic iliac vein pacing is unknown. No cases were reported by Ellestad in his follow-up series.[4]

Our patient exemplifies two decades of pacing, with its triumphs and failures. He continues to challenge us to solve problems related to pacing in the future. We are appreciative witnesses and participants in the ongoing art of pacing.

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Spinal subdural hematoma: a rare complication of lumbar puncture

Case report and review of the literature

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ABSTRACT: *Spinal subdural hematoma, though rare, is an established complication of lumbar puncture. A young man with persistent back and neck pain after a traumatic lumbar puncture for the diagnosis of lymphocytic meningitis is presented. A diagnosis of spinal subdural hematoma at T2 to T8 levels without significant spinal cord compression was confirmed by magnetic resonance imaging. Symptoms resolved after one month of analgesics and muscle relaxants.*

Spinal subdural hematoma is a rare entity that can arise from a variety of predisposing factors. These include hemorrhagic disorders, anticoagulation[1,2] or antiplatelet therapy,[3] lumbar puncture,[4] vascular malformations,[5] tumors,[6] and trauma.[7] Spontaneous occurrences have also been documented.[8] The presentation spectrum ranges from a milder form with back pain and a radicular component to a more severe form with spinal cord compression and paraplegia.[9] It must be recognized early and appropriate therapy instituted promptly.

We report the case of spinal subdural hematoma in a young man who presented with severe back and neck pain after a traumatic lumbar puncture performed for the diagnosis of lymphocytic meningitis.

Case report

A previously healthy 20-year-old man presented to the emergency department with a three-day history of headache, fever, neck stiffness, and flu-like symptoms. He underwent a diagnostic lumbar puncture (LP) that was traumatic after three attempts. Cerebrospinal fluid (CSF) study suggested lymphocytic meningitis, with 1425 rbc/cu mm, protein of 25



Figure 1. T_1 - weighted image through T_4 vertebrae (TR 817 msec., TE 20 msec., spin echo pulse sequence on 1 Telsa scanner). Demonstrates high signal intensity in the subdural space (arrows) with deformity of the posterior aspect of the theca without spinal cord compression, consistent with paramagnetic effect of methemoglobin.

mg/dl, glucose of 61 mg/dl, 1 wbc/cu mm, and no organism on gram stain (**Table 1**). He was subsequently sent home on analgesics. He returned three days later with severe and persistent back and neck pain without fever; a repeat LP done by an anesthesiologist revealed 2508 rbc/cu mm, protein of 69 mg/dl, glucose of 58 mg/dl, 11 wbc/cu mm (67% neutrophils and 33% lymphocytes) and no organisms on gram stain. Computed tomographic (CT) scan of the brain without contrast revealed no abnormality.

He was admitted with a tentative diagnosis of subarachnoid hemorrhage (SAH) and treated with intravenous ceftriaxone for possible bacterial meningitis. Four vessel cerebral angiography on day two of admission was normal with no evidence of aneurysm, arteriovenous malformation, or cerebral vasospasm. Routine blood counts, chemistry, coagulation studies, blood cultures, CSF cultures, CSF VDRL, HIV I and II titers, and lyme serology were all negative. The severe neck and back pain, with the absence of fever, persisted throughout this period requiring the use of narcotic analgesics and muscle relaxants.

On day six of admission, the patient's symptoms persisted and a repeat lumbar puncture was done by the neurologist. The CSF study revealed no red blood cells, glucose of 56 mg/dl, protein of 42 mg/dl, 16 wbc/cu mm (99% lymphocytes and 1% neutrophils) and no organism on gram stain. At this point the neurologist ordered a cervical and thoracic spine magnetic resonance imaging (MRI) to exclude spinal vertebra disc herniation or a dural mass as a cause for the severe persistent back pain and neck pain as well as the neck stiffness. This revealed subdural collection of blood from spinal levels T_2 to T_8 without significant spinal cord compression. The patient was subsequently discharged on analgesics and muscle relaxants. There was complete resolution of symptoms at follow-up one month after discharge.

TABLE 1. Cerebrospinal fluid study results

	Emergency room visit (3 days before admission)	Admission day 1	Admission day 6 (Day of discharge)
Appearance	Slightly bloody	Slightly bloody	Clear
Color	Colorless	Colorless	Colorless
Specific gravity	1.005		1.006
Glucose	61 mg/dl	58 mg/dl	56 mg/dl
Protein	25 mg/dl	69 mg/dl	42 mg/dl
Red blood cells	1425 / cu mm	2508 / cu mm	0 - 1 / cu mm
White blood cells	1 / cu mm	11 / cu mm	11 - 16 / cu mm
Gram stain	Negative	Negative	Negative

Discussion

Spinal subdural hematoma is rare. Clinical situations in which it has being reported include hemorrhagic disorders, anticoagulation[1] or antiplatelet therapy,[3] lumbar puncture,[4] vascular malformations,[5] tumors,[6] and trauma.[7] Spontaneous occurrences have also been documented.[8]

Acute hematomas occur within hours with sudden radicular back pain followed by paraplegia and bladder and bowel paralysis. Chronic hematomas may take weeks to years to progress to partial or complete paraplegia.[2]

Epidemiological studies show an equal male to female ratio. All ages are affected with a slightly higher incidence in elderly patients. The thoracic spine is more often involved followed by the lumbar spine.[10] A review of the English literature in 1983 found 33 cases of spinal hematoma occurring after attempted lumbar puncture, and they were categorized as subarachnoid in twelve cases, subdural in six cases, both subdural and subarachnoid in six cases, and epidural in seven cases. Twelve of these lumbar punctures were described as difficult and five as being bloody.[1]

Another review in 1996 found nine more reported cases of subdural hematoma with only two related to lumbar puncture.[9]

Several series reviewing over 50,000 cases of lumbar puncture after spinal anesthesia showed that hemorrhagic complications are rare,[11,12,13,14] but the fact that spinal subdural hematoma as a complication can occur has been documented by over 42 previously reported cases.

The source of subdural hematoma is not clear because there are very few vessels within the subdural space. It is attributed to the puncture of Batsons' epidural venous plexus, tearing of delicate subdural vessels, or lacerations of the radicular vessels that course along the surface of each long cauda equina root.[4] Spinal subdural hematoma after traumatic lumbar puncture may be due to blood that dissects from a lacerated radicular vessel into the subdural space where it organizes and remains.[4]

The patient's MRI revealed abnormal high signal intensity on T_1 and areas of low signal intensity on T_2-weighted images in the subdural space in the upper and mid-thoracic spine dorsal to the thecal sac, spanning approximately T_2 to T_8 causing mild to moderate impingement on the dorsal aspect of the adjacent thecal sac (**Figure 1, Figure 2**). There was no spinal cord compression. This was most consistent with subdural collection of blood in the spinal canal. We propose that our patient developed spinal subdural hematoma as a result of traumatic lumbar puncture on his initial visit to the emergency department, and this condition presented with persistent back pain due to the small amount of subdural bleeding and absence of spinal cord compression.

The preferred treatment for subdural hematoma is emergent surgical decompression with evacuation of the hematoma. Some authors have elected non-operative management with resolution of both the hematoma and neurologic deficits.[15] We chose conservative management for our patient because the bleeding was minimal and he did not have spinal cord compression or significant neurologic deficit. A follow-up MRI scan to document complete resolution would have been ideal, but was not done because of cost and the patient's complete clinical recovery.

Conclusion

Spinal subdural hematoma after a traumatic lumbar puncture, though rare, is an established clinical entity. Physicians should be alert to this potentially serious complication of lumbar puncture, particularly in patients presenting with persistent back or neck pain in the right clinical setting who do not respond promptly to treatment for the presumed diagnosis. Physicians should not hesitate to order cervical and/or thoracic spine MRI when the diagnosis is suspected even when pressure for cost containment is high.



Figure 2. Spin echo T_2 - weighted sagittal MRI image of upper and mid-thoracic spine (TR 2500 msec., TE 80 msec). Shows areas of low signal intensity(arrows) consistent with paramagnetic susceptibility effect from subdural blood.

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The Prion Dementias

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The prion dementias are an example of disease reasoning as applied to psychiatry.[1] Disease reasoning begins by defining a clinical syndrome presumed to be caused by a disease (broken part) in the brain. The reasoning then follows an examination in sequence of the pathology, etiology, and pathophysiology of the disease as it relates to the syndrome. The prion dementias of humans[2-8] include Creutzfeldt-Jakob Disease (CJD), Gerstmann-Straussler-Scheinker Syndrome (GSS), and kuru, a condition in which the disease is transmitted from cannibal to cannibal in the process of eating human brain. The latter condition will not be discussed as it is extinct. Prion diseases are not unique to humans. They afflict sheep with a condition called scrapie and cows with a condition called Bovine Spongiform Encephalopathy (BSE). There are other animal examples of transmissible prion diseases all causing spongiform encephalopathies, which affect mink, monkey, mule-deer, cat, and mouse.

Case report

Ms. A is a 35-year-old, right-handed, divorced white mother of three with a progressive dementia of 6 to 8 years duration. She was first seen at the Johns Hopkins Neuropsychiatry Service in January 1993 at age 31. She is a high-school graduate, now unable to work.

The family history is notable for GSS in her father, paternal uncle and paternal aunt, both siblings of her father. The family is of Italian descent and has known for generations that there is an illness running in their family which afflicts people with "senility and shakes" later in life.

The patient had no significant medical, neurologic, substance abuse, or psychiatric history before a traumatic brain injury at age 25, with transient loss of consciousness. Two years later she suffered the onset of the present illness; she would pause in mid-sentence and have to think about what she

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was saying. Subsequently she began having difficulties performing at work and losing her memory. She developed a depressive episode with suicidal thoughts. She was hospitalized at a psychiatric hospital. A magnetic resonance imaging (MRI) showed bitemporal atrophy. The electroencephalography (EEG) was diffusely slowed. This was attributed to medication treatment. After discharge, she was followed in an outpatient psychiatric program and appeared stable at first. However, the memory loss continued to worsen.

Ms. A. subsequently developed difficulty driving and had minor car accidents. She became more irritable, apathetic, and socially withdrawn. She also developed a sleep disturbance. This precipitated a second hospitalization in late 1992 in a different hospital with the diagnosis of dementia and psychotic depression. She was referred to Neuropsychiatry at Johns Hopkins Hospital for further evaluation.

The patient was first seen in January of 1993 at which point a neurologic examination revealed only bilateral Babinski signs. The mental status exam revealed no depression, delusions, or hallucinations. She had a global cognitive impairment and a Mini Mental State of 18. The diagnostic workup revealed a global cognitive impairment with cortical features on neuropsychological testing,[9] a negative blood laboratory panel for potential causes of dementia, an MRI with global brain atrophy, and an EEG with diffuse slowing and 3 to 4 HZ spike waves emanating from both temporal regions. Initial impression was that the patient suffered from Alzheimer's disease.

Subsequently, her uncle presented with a Creutzfeldt-Jakob-like picture and more detailed family history became available. After his death it was confirmed that a prion disease was the cause of his condition.[9] The patient then underwent genetic testing which revealed that she was the carrier of a mutant human prion protein gene with a proline-to-tyrosine substitution on Codon 102, as was her uncle.[5] The diagnosis was revised attributing the dementia to GSS.

Ms. A was followed over the next several years and developed progressive deterioration in cognition with a steady decline on the Mini Mental from a score of 18 at first presentation to a score of 5 in March 1997. At that time, she had increasing trouble with remembering things and would repeat questions constantly. She was perseverative in verbal communication. She had limited ability to remember and understand simple things, and was not oriented to date or time. She became clumsy and dependent on daily living activities. Her movements were slow, her gait was broad-based, and she would frequently lean to one side when standing. She became "giggly", childlike, disinhibited, and at times inappropriate, although not apathetic. She remained socially withdrawn and disinterested in doing things. She also developed a voracious appetite and would eat without satiety unless restricted. She developed no other behavioral symptoms during this time, including no recurrence of depression, delusions, or hallucinations. She had normal sleep and she developed no sexual disturbances.

Clinical syndrome

The clinical syndrome of the prion dementias includes dementia, cerebellar signs, pyramidal disturbances, and behavioral symptoms. The dementia has a predominantly cortical pattern[9] with amnesia, aphasia, apraxia, and agnosia, although at times there is executive disturbance.[2] Some patients develop cortical blindness. The cerebellar signs include ataxia and dysmetria. Many patients develop myoclonus, seizures, or delirium.[2] Others first present with behavioral symptoms including apathy, depression, anxiety, delusions, hallucinations, disinhibition, aggression, irritability, or personality change. All patients eventually exhibit a motor decline, which leads to their death. The combination of signs and symptoms is variable across patients and within families. Some patients may initially present with cerebellar signs, whereas others with dementia. As the condition progresses, dementia invariably develops.

The clinical syndrome can be distinguished in terms of its course into two patterns. The CJD type, which afflicts 80% to 85% of patients, and the GSS type, which afflicts 15% to 20% of patients. CJD patients are older (50 to 70 years old), and an equal number of men and women are afflicted.[2] This pattern has an acute onset and is rapidly progressive, with death occurring within one year (median 6 months).[2] The CJD pattern is typically sporadic, although there are familial cases and it has a stable worldwide incidence of 1 to 2 cases per million population.[2] In contrast, the GSS pattern, which consists of a similar clinical syndrome, afflicts younger patients (30-60 years old), has a subacute onset of months to years, and a slower progression of as long as 4 to 5 years to death, (median 3.5 years).[2] GSS is always familial with autosomal dominant inheritance and has an annual worldwide incidence of 1 to 2 per ten million population worldwide (about one tenth that of the CJD pattern[2]).

To make the diagnosis of a prion dementia it is necessary to recognize the clinical pattern. The index of suspicion is highest among younger patients, those who have a strong family history, or those who present with features that are atypical of the more common dementias. Once this pattern is

recognized and a prion dementia is considered, it is important to exclude other causes through a workup. Brain imaging is not diagnostic, although it is useful to exclude conditions such as brain tumor or infarcts. Electro-encephalography (EEG) is quite useful: 80% of patients show characteristic triphasic sharp waves with a frequency of 3 to 4 per second.[10] Lumbar puncture might be useful since CJD-specific proteins may appear in 2D gel electrophoresis of the cerebrospinal fluid (CSF).[11] While these proteins are not always present (low sensitivity), the are highly specific to the presence of a prion dementia. The diagnosis may also be confirmed, as with the case presented, through genetic testing looking for mutations in the prion protein.[5,8] For the definitive diagnosis of prion dementia it is necessary to examine brain tissue microscopically, either through biopsy or postmortem. It is not always critical to obtain a brain biopsy if the overall clinical presentation is conclusive.

Pathology

The prion dementias of humans and of animals have a common pathology whose hallmark is spongiform change in the brain.[2-8,10] In cortex, cerebellum, and basal ganglia, there is neuronal loss, reactive astrocytosis, and cytoplasmic vacuolation which give the diseased brain tissue its characteristic sponge-like appearance.[2,10] Additionally, in the cerebellum there are amyloid plaques.[2] Prion protein fibrils are present throughout brain, and immunohistochemical staining shows the presence of prion particles.[2,5,6]

Etiology

Prion particles are believed to be the etiologic agent of these dementias. The name comes from the first two letters of the word protein and the last three letters of the word infection. The prion particles are sufficient to cause disease in the brain .[2-8] They are entirely proteinatious in nature, with no evidence that they include nucleic acid.[6,7] The transmission of prion particles to healthy organisms leads to brain diseases with long incubations, which in humans may be as long as 30 to 50 years.[2,6,7] It is possible to transmit across-species, although this is subject to a species barrier. The species barrier refers to the observation that prions from diseased hosts will not afflict all other species.[2] Rather the likelihood of disease increases if there is high homology in amino acid sequence between the normal prion protein (see below) of the recipient and the normal prion protein of the transmitting species.[2] This is the case because the disease is not directly caused by the transmission of the prion from a diseased host to a nondiseased host. Rather, the prion from the diseased host transforms the prion protein of the nondiseased host in such a way that the now transformed protein of the originally nondiseased host leads to disease.[2,6,7] This process will be discussed under pathophysiology.

A few words first about the normal prion protein. All mammals carry a gene, which in humans is on the small arm of chromosome 20, referred to as the prion protein gene.[2] In humans, this gene produces a 254 amino acid protein, which is highly expressed throughout all phases of life.[8,12] It is a transmembrane protein of unknown function, present in all tissue, including brain.[8,12] This transmembrane protein is primarily conformed in three dimensions as an alpha-helix.[2,6,7] It is metabolized as part of standard day-to-day turnover of transmembrane cellular proteins in brain.[2] The normal alpha-helix prion protein itself is probably not capable of producing disease if transmitted to healthy hosts.

Pathophysiology

The key event in the production of disease is the transformation of the normal human prion protein from a three-dimensional alpha-helix to a three-dimensional beta sheet conformation. The transformed prion protein is hard to metabolize, is protease resistant and eventually accumulates in cells leading to their vacuolation and destruction.[2,6,7] The transformed prion protein appears to have the same amino acid sequence as the host prion protein and only differs in its three-dimensional configuration. Once the three-dimensionally transformed beta-sheet prion protein is formed it subsequently induces further transformation of other molecules of the normal, alpha-helix prion protein into the abnormal (beta-sheet) form, thus propagating the disease in the brain.[6,7]

What initiates conformational change in humans? There are several possibilities. One is the ingestion of exogenous, human, abnormally conformed prion protein. An example is kuru, which afflicted cannibals who ate the diseased brains of other cannibals.[2] Another is iatrogenic transmission. This is most commonly described with corneal transplantation, or through the use of human brain tissue to produce growth hormone.[2] Tissue contaminated with abnormally conformed prion protein in these cases would enter the brain, transform the host's normal proteins, and lead to disease.

Another possible way to initiate conformational change is the ingestion of abnormally conformed prion protein from other species. This has not been shown to occur conclusively.[2-14] The next possibility is that humans may inherit a human prion protein that is mutant, as appears to be the case with Ms. A. This mutant prion protein may transform three-dimensionally more easily than the wild-type. Finally, spon-

taneous conformational change of the prion protein and spontaneous mutation of the prion protein gene also must be considered. The latter may underlie most cases of sporadic CJD.

Several mutations to the prion protein gene have been reported in the literature associated with both the CJD-pattern illness and the GSS-pattern illness.[5,12] These range from insertion of repeats, to deletions of large segments of the chromosome, to single amino acid substitutions. It is now possible through genetic testing to determine whether individual patients or people at risk are carriers of such mutations. They are believed to have 100% penetrance into the diseased phenotype.

The BSE scare

The transmissibility of prions across species carries a worry for epidemics in humans. This was brought to a head with concerns that "mad cow disease" was transmitted to humans, a matter which received a lot of publicity in the media in 1996. The scare was initiated by a description in 1986 of mad cow disease, or Bovine Spongiform Encephalopathy (BSE),[13,14] in cattle targeted for consumption by humans. This was focused in the United Kingdom, although has been reported elsewhere in the world. This disease was linked to the practice in England of feeding the cows sheep bone meal and of later "recycling" infected cows into the feed of other cows. After changes in feeding practices in 1988, the epidemic of BSE ended.[14]

Given concerns that BSE may have been transmitted to humans, surveillance efforts for CJD were redoubled in the United Kingdom between 1990 and 1996.[14] During this time 207 cases of CJD were reported[14] for an annual incidence of 0.6 per million per year (approximately, given a relatively stable population of around 55 million in the United Kingdom). Of these, 185 cases were sporadic.[14] There was no clear increase in the incidence of the disease over the age of 45. However, there was an apparent increase in incidence in persons under the age of 45. Specifically, in the 20-year period from 1970 to 1989, nine cases of CJD in persons under the age of 45 were reported,[14] approximately one case per year, on average. However, in the seven-year period between 1990 and 1996, there were 13 cases reported, almost two cases per year. Similarly, between 1970 and 1989 four cases of CJD were reported in persons under age 35,[14] approximately one new case every five years. In contrast, during the seven-year period between 1990 and 1996 there were nine cases of CJD in persons younger than 35,[14] a rate of over one case per year. What is particularly interesting is that all nine cases under age 35 and one of the cases between ages 35 and 45 appeared to have a distinct clinical syndrome and pathology.[14]

These cases have given rise to the Variant CJD Syndrome (V-CJD) which English epidemiologists were concerned may be a consequence of transmission of prions from cows to humans.[14] The ten cases suggesting V-CJD typically presented with depression and personality change. This was followed by ataxia, and then dementia within six to nine months. Seven out of ten patients developed myoclonus within a year. Almost all progressed to death within 7.5 to 22.5 months with a median of 12 months. None of these cases had characteristic EEG changes, none had family histories of dementia, and none had known prion protein gene mutations. Examination of the brain, while showing spongiform change, showed a very atypical feature for CJD: the presence of abundant scrapie plaques in the cortex.

While V-CJD may well represent a new CJD-like condition, there is little evidence of a direct link to BSE, or that BSE was transmitted to humans from animals. Indeed, there are several problems with the hypothesis that V-CJD was transmitted from cows. For example, it is possible that the increased surveillance in the United Kingdom turned up cases of CJD in young people which previously might not have been called cases of CJD, and that perhaps CJD in young people has a different clinical syndrome and pathology. Also, why would BSE, if transmitted to humans, only afflict those under the age 45, and why would it not be present in farmers who are known to have eaten cattle that later went on to develop BSE?

Conclusion

The prion dementias consist of a distinct clinical syndrome, accompanied by the deposition of prion protein fibrils and amyloid plaques, followed by spongiform changes in brain. The initial cause is the conformational change of the normal prion protein into a hard-to-metabolize, mostly beta-sheet three dimensional conformation. A variety of processes have been postulated to lead to this transformation of the normal human prion protein, including the ingestion of exogenous abnormally conformed prions from the same species or from other species, transplantation, use of human growth hormone as a treatment, and mutation in the normal human prion protein. It is also possible that spontaneous transformation from the normal three dimensional protein to the abnormal beta sheet protein occurs which may account for most cases of CJD. The suggestion that some cases of the so-called V-CJD might be due to the transmission of prions from cows to humans has not been proven conclusively.

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National Institute of Mental Health

Public Service Announcement Campaign on Anxiety Disorders



The National Institute of Mental Health (NIMH) has developed dramatic television and radio public service announcements (PSAs) on anxiety disorders for you to use as part of your community education efforts. These PSAs portray the severely disabling fears associated with obsessive-compulsive disorder, panic disorder and post-traumatic stress disorder, and send the hopeful message that people living with these frightening mental illnesses can be successfully treated.

The PSAs were developed as part of NIMH's Anxiety Disorders Education Program, and include a 30-second television PSA in English and 30-and 60-second radio PSAs (in both English and Spanish).

A technical assistance kit accompanies the PSAs and provides easy-to-use tips and tools for promoting the PSAs to local media, as well as to members of your community. For example, it discusses ways you can use PSAs to coordinate group viewings and follow-up discussions about mental health topics.

To order these materials, write to the National Institute of Mental Health, Anxiety Disorders Education Program, Room 7C-02, MSC8030, 5600 Fishers Lane, Bethesda, MD 20892; or fax to (301) 443-4279. Please specify which materials you would like to receive and include the corresponding order number. Materials include the: PSA Technical Assistance Kit (OM-00-4180), 30-second Television PSA in VHS format (OM-00-4174), Radio PSAs on CD with English packaging (OM-00-4178), and Radio PSAs on CD with Spanish packaging (OM-00-4179). Limited quantities are available at no cost and will be distributed on a first request received basis.

Small bowel obstruction caused by intussusception after the ingestion of a plastic clip

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Small bowel intussusception is rare in adults and can have an uncharacteristic symptomatology. In 2% to 12% of the cases a lesion is recognizable radiographically as a lead point initiating the intussusception (in the small bowel).[1,2] We present a case of intussusception caused by an ingested plastic clip that attached itself to the mucosa of the ileum and functioned as a lead point for intestinal invagination.

Case report

A 46-year-old mentally retarded man had experienced intermittent abdominal pain for three weeks before his visit to our emergency department. He was admitted with severe abdominal pain, distension, and vomiting. During the initial evaluation, his abdomen was rigid with hyperactive bowel sounds. His laboratory values were unremarkable except for a minimally elevated serum urea nitrogen and creatinine. The white blood cell count and differential were normal and the patient had no history of abdominal surgeries.

Abdominal plain film examination revealed multiple dilated loops of bowel characteristic of small bowel obstruction (**Figure 1**). Because of the intermittent character of the patient's abdominal pain and his inability to provide an accurate clinical history, additional abdominal imaging was conducted using magnetic resonance imaging (MRI) utilizing the HASTE sequence. (An alternative way of imaging the bowel via MRI is by using an imaging protocol known as the HASTE sequence [half Fourier single shot turbo spin echo]. This is a commercially available sequence that uses an ultrafast heavily T_2-weighted sequence that can acquire a series of images in a single breath hold. The fluid-filled bowel can be visualized via this T_2-weighted sequence with acquisition times of approximately one slice per second.) The HASTE MRI examination demonstrated a soft tissue mass in the right



Figure 1. Erect abdominal x-ray demonstrating multiple loops of dilated small bowel with air-fluid levels in the upper and mid abdomen (arrows) characteristic for small bowel obstruction.



Figure 2a. Coronal HASTE MRI demonstrating dilated small bowel loops proximally (arrows) and a thickened segment of small bowel in the right lower quadrant with the multiple concentric ring appearance typical for intussusception (arrowheads).

lower quadrant with the concentric ring appearance typical for intussusception (**Figures 2a and 2b**).

The patient was subsequently taken to laparotomy and underwent resection of the distal ileum. The resected specimen demonstrated a plastic clip (the type used to secure plastic bread bags) attached to the mucosa of the ileum (**Figure 4**). He recovered uneventfully and was discharged on the tenth postoperative day.

Discussion

Intestinal obstruction due to the ingestion of foreign bodies is rare but occurs with an increased frequency among mentally retarded persons or persons with psychiatric disorders.[3] Studies have documented up to a 25% incidence of foreign body ingestion over a two-year period in institutionalized patients.[4] Importantly, the morbidity and mortality in these particular patients can be as high as 30%.[3]

In adults, an intussusception is often subacute or intermittent and is usually caused by a mass (i.e. lipoma, carcinoma, lymphoma, etc.). Enteroenteric intussusception has also been recognized as a result of foreign body ingestion[5] and must be considered in a mentally retarded patient presenting with symptoms of bowel obstruction.

Imaging choice in small bowel obstruction remains controversial. After the initial evaluation with abdominal



Figure 2b. Sagittal HASTE MRI demonstrates air fluid levels (small arrowheads). A minimal amount of free peritoneal fluid (large arrowhead) as well as the right lower quadrant intussusception are also demonstrated (arrow).

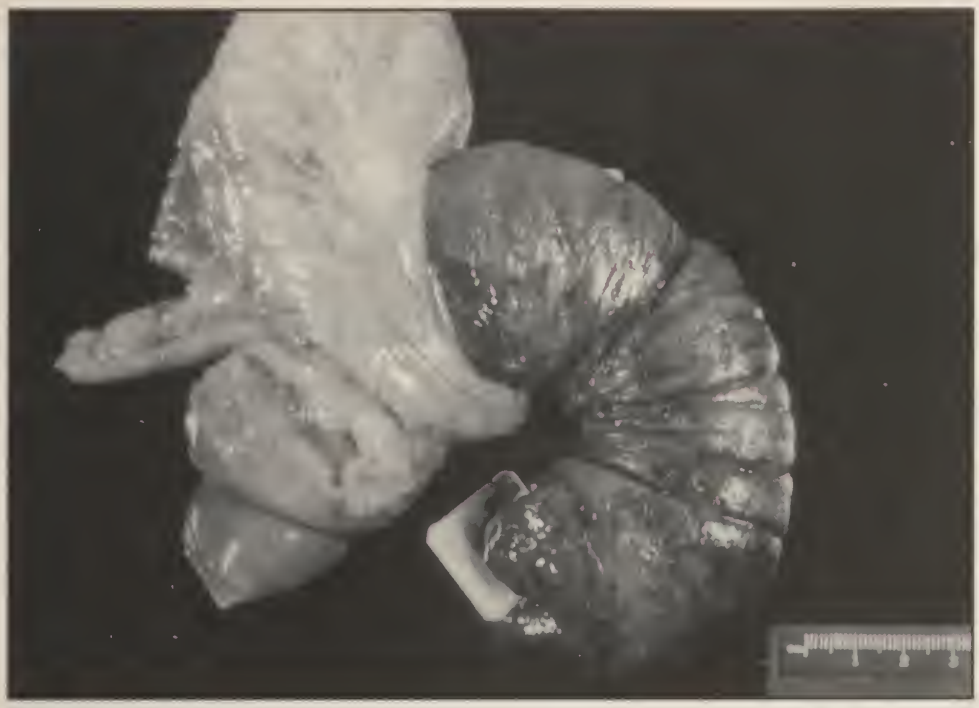


Figure 3. Gross Surgical specimen demonstrates the resected terminal ileum and a portion of the cecum. Note the plastic clip attached to the end of the ileum.

plain films, many different examinations can be used to obtain further information. In this situation, MRI examination using the HASTE sequence was chosen because of its brief scanning time (78 seconds), its multiplanar capability (axial, coronal, and sagittal planes), and because no additional contrast (either oral or IV) was needed.

MRI using the HASTE sequence has been shown to accurately depict the presence and level of bowel obstruction[6,7] and, in this case, a correct diagnosis of distal small bowel intussusception was made preoperatively. This preoperative information was obtained quickly, accurately, and noninvasively allowing for expedient treatment and preoperative planning.

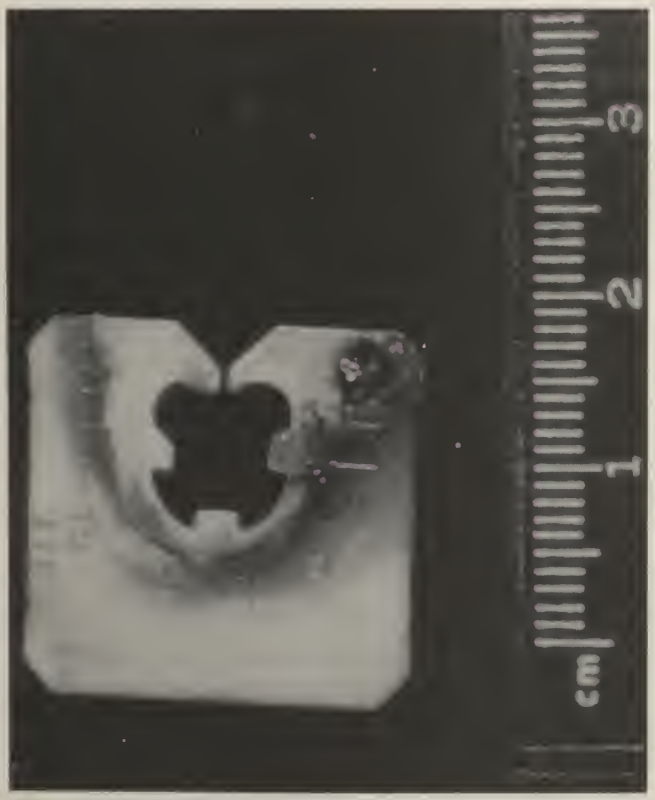


Figure 4. The plastic clip (the type used to secure plastic bread bags) retrieved from the surgical specimen. Note the writing stamped into the plastic (UNIT PRICE $1.89).

Conclusion

Foreign body ingestion is a common event in institutional patients and can result in significant morbidity and mortality. MRI using the HASTE sequence can provide an accurate, rapid, and noninvasive method of evaluating complicated bowel obstruction and should be considered in the imaging evaluation of these patients.

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A community care initiative: Maryland and Hopkins students take to the streets in Baltimore City

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ABTRACT: *Medical students from University of Maryland and Johns Hopkins University, with a grant from the Maryland Chapter of the American College of Physicians, held a free health fair in a Baltimore City neighborhood. The goals were to heighten awareness of common health problems, learn more about a medically underserved community, and increase access to primary care services in that community. The students planned booths to offer information and screening on 19 common health topics. Fair organizers worked with a local clinic, People's Community Health Center, and a neighborhood development organization, the Safe and Smart Center, to create an event that would engage and educate people on relevant issues. Approximately 100 medical students participated in the event and 350 people attended the fair. An optional survey filled out by fair participants revealed that a diverse group of people attended the event. Comments about the day from medical students and fair participants show that the event was enjoyable and offered a tremendous learning opportunity for both groups. This paper also discusses problems that arose during the planning stages as well as suggestions for those interested in planning a similar event.*

On any given Saturday on 32nd Street and Greenmount Avenue, people in Baltimore can buy anything from fresh grown tomatoes to grilled

Portabello mushrooms at the Farmer's Market. On one Saturday last spring, while shopping for vegetables, local residents also had their eyes and blood pressure checked, learned about their risk for cancer, and discussed substance abuse. In an instance of unprecedented cooperation between Baltimore's two medical schools, 100 students from the University of Maryland and Johns Hopkins University joined together to organize a second annual free health fair for a medically underserved population.

With support from the Maryland Chapter of the American College of Physicians, students set out to heighten awareness of common health problems, learn more about a medically underserved community, and increase access to primary care services.

"I felt very appreciated by the people in the community for sharing information about hospice care. Everyone experiences tough issues at the end of life for family members, as well as themselves. Our booth gave people a chance to discuss these issues and start to address them."

– Alex Walley, JHU MS 2

"The Community Care Initiative taught me great lessons about the thoughtful planning that goes into affecting community health care. I also had a wicked good time."

–Peter Reese, JHU MS 3

To meet these goals, students organized a health fair at which community members could participate in numerous screening activities and learn about issues such as hypertension, breast cancer, nutrition, tuberculosis, and hospice care. A local clinic, People's Community Health Center, was involved in the planning of the event and offered follow up to any participant needing primary care services.

Booth organizers trained volunteers at a dinner held the week before the fair. Dr. Greg Branch of the East Baltimore Medical Center spoke about the importance of physician involvement in the community and Morgan Allyn, a local community organizer, informed volunteers of current issues and problems in the neighborhoods we would be serving. Six months of discussion, meetings, and research ended on a sunny Saturday, April 26, 1997. An estimated 350 people from the surrounding neighborhoods of Waverly, Harwood, and Charles Village visited the Farmer's Market and a nearby merchant's festival and found themselves talking with medical students about their health concerns.

The management team

This project was completely student-organized. A group of five students was responsible for administrative oversight of specific projects (community liaison, booth coordinator, public relations coordinator, organizer of the training session, and the treasurer). An additional 30 students chose subjects of interest to be developed into interactive booths. Booths were staffed by volunteers throughout the day of the fair. This proved to be an effective management scheme. See **Table 1** for a timeline of health fair preparations.

The Big Day: April 26th , 8 am - 2 pm

Twenty-two educational booths were arranged in a large circle covering one block on 32nd Street. Visitors could visit booths freely but were encouraged to first register by filling out a one-page form containing demographic information. In addition to the booths, a fire truck, immunization van, and vision van were positioned to attract visitors. A local aerobics instructor from Donnasize conducted free classes in the street throughout the day. Several local high school students received community service credit by assisting in the various booths. People's Community Health Center also staffed a booth to arrange necessary follow-up appointments. One student

"It was such a great experience in that even as first year students [then] we had the knowledge and ability to personally interact with people of a community in need and make a significant effort to teach them about improving the quality and quantity of their lives."

–Kadisha Rapp, UM MS2

dressed as a clown circulated to entertain children. "Buckle Bear" spoke to kids about the importance of wearing seat belts. A list of booths staffed by medical students is provided in **Table 2**.

Demographics of visitors

Visitors were encouraged to fill out registration forms containing demographic information about the population

Table 1. Preparations for the health fair: a timeline

November

- First meeting: thirty-five students reflected on the first health fair and brainstormed pros and cons of organizing another fair
- Organizers met with faculty advisors and medical school deans to introduce the project
- Five administrative tasks were assigned (community liaison, treasurer, public relations coordinator, organizer of the training dinner, and booth coordinator)
- Health fair date chosen- April 12th 1997 with rain date of April 19th (this date was eventually changed)

December

- Booth topics chosen
- Community liaison secured street adjacent to the Waverly Winter Farmers Market for the location
- Community liaison met with People's Community Health Center
- Budget developed by treasurer
- Medline search for information on health fairs
- Phone and email lists distributed to students

January

- Booth leaders networked with organizations and sought faculty advice to prepare booths
- Public relations coordinator contacted marketing departments at JHU and UM for help with advertising
- Organizers updated the American College of Physicians of our progress
- Faculty member applied for educational grants from pharmaceutical companies

February

- Ideas generated for speakers for the training dinner
- Public Service Announcement written by public relations coordinator and sent to newspapers, radio stations, television stations, and community newsletters

February cont.

- Community liaison arranged entertainment: fire truck, Buckle Bear, clown, and aerobics demonstration by Donnasize
- Immunization Van from the Baltimore City Health Department reserved
- Community liaison met with Safe and Smart, a community organization planning a merchant's festival
- Health fair date changed to coincide with merchant's festival-unfortunately, the new date conflicted with a UM MS 2 examination
- Baltimore City Police informed of the event

March

- Public relations coordinator and treasurer designed and printed promotional T- Shirts, posters, and fliers
- Organizers updated the American College of Physicians of our progress
- Students asked local businesses to donate items that could be given away at the fair
- Booth coordinator designed physical layout of booths on 32nd Street
- Posters and fliers distributed among local neighborhood associations, schools, and churches
- Announcements made at community meetings
- Booth leaders obtained educational literature and supplies to distribute at the fair
- Student volunteers recruited from medical, nursing, dental chools, and local high schools

April

- Organizers and booth leaders met to discuss final layouts and logistics
- Fliers distributed on Saturday mornings in a commercial district of Waverly
- Donations from businesses collected
- Tables and chairs rented
- Registration and data sheets created
- Training dinner held April 23: Booth leaders oriented volunteers, motivational speakers discussed the neighborhood and community medicine, individual booth signs constructed

served. Registration forms were collected from approximately 180 people. Because registration was voluntary and access to the fair was unlimited, this was estimated to be less than half the total number of visitors actually served. Results of the survey are listed in **Table 3**. Although an attempt was made to analyze clinical measurements taken at the fair (blood pressure, etc.), these data are not included because they were too fragmentary.

Discussion

The results of our demographic survey reflect a diverse population. The racial backgrounds of our participants, predominately African American (60 %), are indicative of the city as a whole. Most of those polled were adults over the age of 18 (83%), with a significant proportion over the age of 50 (28 %). In contrast, very few teenagers were involved (1 %). It is interesting that while most people had full-time jobs (42%), 14% of the persons were unemployed. The educational backgrounds of the participants were varied. Many (44 %) had college training. Perhaps most astounding is that 22% of people surveyed had no health insurance or medical assistance, yet most (73 %) reported having regular checkups.

Table 2. Booths staffed by medical students

- Smoking Cessation
- Hypertension
- Diabetes
- Vision Screening / Glaucoma
- Cancer Awareness
- Cervical and Breast Cancers
- Sexually Transmitted Diseases
- Pediatrics
- Immunizations
- Nutrition and Exercise
- Alcohol and Substance Abuse
- COPD / Lung Disease
- Tuberculosis Screening (PPD placement)
- Depression
- Tooth and Gum Care (oral hygiene)
- Gun Violence Prevention
- Fire Safety
- Community Resources
- Hospice
- Medicaid / Medicare
- Sickle Cell Anemia
- Pre Natal Care

"The Community Care Initiative has broadened my understanding of the most pressing health care needs of urban areas, of the limits to health care access faced by many in the community, and of the most crucial component of the patient-physician relationship-patient teaching. I hope that the role of the health fair in the Waverly Community can be expanded in the coming years."

–Amy Spooner, JHU MS 3

Did we meet our goals?

The Community Care Initiative, a first-of-its-kind joint effort between medical students from Johns Hopkins University and University of Maryland, was largely successful in meeting its objectives. The project afforded students a valuable learning opportunity outside of the medical school environment. We were challenged to network and gather resources in order to build from scratch an educational program that would alert people to the risk of disease and inform them of methods of disease prevention.

Although we lack the data to prove that our educational efforts were successful, we believe that our first goal, to

"The biggest problem with the first two years of medical school is the absence of applied learning. The health fair gave me an opportunity to work directly with the community. I believe we really did reach people with our smoking cessation booth.It felt incredible to know we were having an impact on people."

–Jodi Demunter, UM MS 2

heighten awareness of common health problems, was met. Student volunteers remember countless conversations held at individual booths in which meaningful questions were answered. In addition, many participants provided written anonymous feedback describing their experience. When asked what new health concerns people were aware of as a result of the fair, responses ranged from cholesterol and nutrition, smoking and how it can affect peak flows, lead poisoning, AIDS, the need for mammograms and the importance of breast exams, prenatal care, and gun violence issues. Some other responses were: "if you are around smokers you may also be at a high risk," "I will talk to my physician about diabetes," "I learned about the sickle cell trait," "I have high pressure in my left eye," "I need glasses," and "my blood pressure is borderline high."

"The health fair attracted a group of people reflecting the diversity of Baltimore. In our chronic lung disease booth, we screened over 200 people for obstructive lung disease as well as distributing smoking cessation educational material."

–Marc Grasso, JHU MS 4

Our second goal, to learn more about a medically underserved community, was met in several ways. A few students were able to spend time meeting with community members in the months before the fair. Many more students were introduced to the neighborhood while hanging posters, passing out fliers, and announcing the fair at local meetings. During the training session that preceded the fair, a community member explained the pressing social and medical issues of the neighborhoods. Most volunteers were exposed to the community on the day of the fair, when we spoke individually to hundreds of participants about their health concerns. Since the fair, People's Community Health Center has arranged for some students to do one-month electives at the clinic. During these rotations, fourth-year students treated a representative group of patients with some degree of autonomy. Many of us experienced for the first time the financial struggles that community health centers face. In these ways, we have become more familiar with the diverse community of Waverly.

Table 3. Demographic survey results

(n = number of people that answered each question)

SEX	(n = 168)
Female	62%
Male	38%
AGE	(n = 171)
Less than 12 y.o.	16%
13 - 17 y.o.	1%
18 - 49 y.o.	55%
Greater than 50 y.o.	28%
RACE	(n = 159)
African American	60%
Caucasian	28%
Other	6%
Hispanic	1%
American Indian	1%
EDUCATION	(n = 144)
Junior high school	13%
Some high school	7%
Finished high school / GED	27%
Vocational Training	8%
Two year college degree	10%
Four year college degree	15%
Post graduate	19%
EMPLOYMENT	(n = 149)
Full time	42%
Unemployed	14%
Student	13%
Part time	11%
Retired	11%
Disabled	8%

HEALTH INSURANCE	(n = 143)
Private	48%
None	22%
Medicare	21%
Medicaid	10%
LAST MEDICAL EXAM	(n = 156)
Less than 6 months ago	50%
6 months - 1 year ago	28%
1 year - 5 years ago	19%
More than 5 years ago	3%
DO YOU HAVE REGULAR CHECK-UPS?	(n = 152)
Yes	73%
No	27%
IF NO, WHERE DO YOU GO WHEN YOU ARE SICK?	(n = 43)
Emergency room	25%
Clinic	17%
HOW DID YOU FIND OUT ABOUT THE FAIR?	(n = 150)
Didn't know about it	41%
Poster / Flier	29%
Word of mouth	21%
Newspaper	5%
TV / Radio	2%
Church	2%
DO YOU SMOKE CIGARETTES?	(n = 155)
No	73%
Yes	27%

We must ultimately conclude, however, that the Community Care Initiative was not able to meet our last objective, to increase access to primary care services. The results of our demographic study indicate that many people—more than expected—already have regular check ups with health care providers. We had also anticipated that people who were found to be in need of health care services would be offered follow-up appointments at a nearby health clinic. This, however, did not seem to occur. While we may have identified the local clinic as a care provider, we were not successful in eliminating all barriers of access to care. This long-standing and complicated problem is part of larger societal issues. Thus, our goal of increasing primary care services in a measurable way was not realistic.

"The spring fair was one of extraordinary proportion. Never before has this community had as many health screening services offered for free, in such a prime location. The students who participated in this year's fair should be commended for a job well done."

–Kim Jackson, Executive Assistant, People's Community Health Center

Conflicts

Organizing a large health fair that involves volunteers from different medical schools, a community health center, and the community itself can be problematic. We encountered numerous difficulties along the way. First, students often struggled to balance school requirements with the work required for such a large project. Our project required biweekly meetings of the five students who were responsible for administrative details of the fair for six months. In addition, a larger group of approximately 30 students were asked to meet on a monthly basis to organize each of the interactive booths. Attendance at these meetings was expectedly scattered and dependent on exams and call schedules.

"The day went very smoothly. We were able to outreach to a lot of people from all ages and backgrounds in the community. I especially remember working with a young homeless couple that had no health insurance."

–Karen Foster, JHU MS 4

Choosing the date for the health fair was also a struggle. In the springtime, first- and second-year students are busy studying for final exams and national boards. As a result, no date for the fair could be identified that didn't exclude at least some students. The date chosen, for example, precluded University of Maryland second-year students from participating because of a final exam. This was disappointing for those students who had already devoted a significant amount of effort in preparing for the fair.

Finally, planning an event that involves so many different groups of students, community organizations, and a health clinic requires diplomacy. As to be expected, each group had different motivations for involvement as well as varied goals. For example, a community organization asked that the fair be held on the same date as their annual merchant's festival in order to boost attendance at both events. Unfortunately, as mentioned above, this precluded the involvement of an entire class of medical students. The organizers had to consider the numerous vantage points and eventually determine what was best for the success of the fair. These challenges were faced by focusing on our common goals: community service, education, and ultimately, increased access to medical care.

"We were impressed and encouraged by the high level of interest among the fair participants in learning about tuberculosis. It was an excellent opportunity for us to practice our patient education skills."

–Lorraine Burns, UM MS4 and Patrick Burns, UM MS1

Suggestions

The following advice is offered to anyone planning a

similar event and to students at Hopkins and Maryland who will organize the future Community Care Initiatives.

Many fair visitors left helpful comments and recommendations. Several asked that the fair be held more frequently. One person asked that local Alcoholics Anonymous meeting schedules be available and that a safe sex workshop be offered in the future. Another person requested that the topic of work stress and related symptoms be addressed. Others wished that more actual blood tests had been offered, for example cholesterol and Prostate Specific Antigen levels. Constructive suggestions also included better advertising and more chairs for people who must wait in line.

"...riding on your shirttails..."

–Philip A. Mackowiak, UM Professor of Medicine and ACP Member

We recommend finding out the specific needs of the community in advance. What health problems are most common? What are community members most concerned about? This may be accomplished by polling people who live in the neighborhood or visiting local health care providers. This process would also facilitate more student involvement in community affairs in the months preceding the fair. Talking with people before the fair would allow for closer relationships between community members and student "outsiders."

Although the project is student-planned, more faculty involvement is advised. Optimally, booth organizers could pair up with faculty members who are "experts" in a particular field to obtain advice on types of questions to expect, reading material that might be helpful, resources in the city, and places to refer people. Faculty members have expressed interest in specific jobs at the health fair.

Advertisement is one of the keys to success of the event. Several students should be committed to this task. In addition to hanging large, color posters in the neighborhood, we also passed out thousands of fliers at local schools and churches. Some students attended community meetings to announce the fair. With help from the public relations departments at Johns Hopkins University and University of Maryland, we arranged newspaper, radio, and television announcements. To recruit volunteers, organizers wore T-shirts explaining the event to schools and posted messages to all students via e-mail. Despite our efforts, 41% of the polled persons did not learn about the fair before their visit. Interested people were not reached with our promotional efforts, indicating the importance of visible ads.

The day of the fair, free gifts help to draw participants to the event. Our free brochures, water bottles, food, toothbrushes, and coloring books were very popular. (The more, the better.) In addition, booths need to be marked very clearly. The signs we taped to the front of each table were barely visible during the most crowded times. We recommend devising a way for booths to be labeled with signs elevated above people's heads. It may also be helpful to give participants a map showing the location of each booth.

Perhaps the best advice we can give is to bring continuity to the project. It is difficult to have an impact on a community's health in one day. This may mean continuing the project consistently in the same community on a yearly basis, so that a long-term relationship between the community and medical students is formed. We feel the cooperation we had last year with the community organizations could be the basis of a long-term relationship with these neighborhoods. The students planning this year's event have again decided to organize a health fair at the same location as last year.

Acknowledgments

We would like to acknowledge our sponsor, the Maryland Chapter of the American College of Physicians; our faculty advisors from the University of Maryland, Dr. Mackowiak and Dr. Standiford, and Johns Hopkins University, Dr. Sisson; our community partners and contacts, Kim Jackson from People's Community Health Center and Morgan Allyn from the Safe and Smart Center; our editors, JHU student Alex Walley and UM professor Dr. Mackowiak; our photographer Joseph McCary; and finally the students from the medical schools, nursing schools, the Johns Hopkins School of Public Health and Hygiene, and the University of Maryland School of Dentistry that put their time and effort into making the fair a success. ■

Books, Etc.

Book review editor:
Chris Papadopoulos, M.D.

The Eye Book. A Complete Guide to Eye Disorders and Health.
Gary H. Cassel, M.D., Michael D. Billig, O.D., Harry G. Randall, M.D.
Foreword by Morton F. Goldberg, M.D., F.A.C.S.
$18.95 paperback; $35.95 hardcover

Does reading in dim light hurt your eyes? Does wearing the "right" sunglasses prevent cataracts? Will eating carrots help you see better? These are questions that your patients may often ask you about their eyes, and given the demands of daily clinical practice you may not be in a position to give them a lengthy answer. *The Eye Book* by Drs. Cassel, Billing, and Randall will provide the answers your patients are seeking in clear and understandable words and diagrams. These two ophthalmologists and one optometrist have written a comprehensive text, which covers a range of eye complaints and disorders. This reviewer particularly liked the question and answer format, which closes most chapters. Since patients may often think only in terms of these queries, such a format will certainly improve one's comprehension of the related chapter.

The chapters on cataract and glaucoma are well written and well illustrated. Through a series of illustrations, the technique of phacoemulsification is well characterized and thus demystified. The illustrations of the changes in the optic nerve in glaucoma provide just enough information so the reader can appreciate the severe disc cupping which may occur. A key question which patients often ask, "Will I go blind from glaucoma?" is answered succinctly and simply and should reassure both patients and their families. Similarly, the leading cause of blindness in the United States, age-related macular degeneration, is covered in understandable language such as dry and wet forms of the disease rather than atrophic and exudative. However, the latter terms are included for the more sophisticated reader.

This book will also be of interest to primary care providers. There are two chapters in particular that this reviewer found unique: "General Health Problems that Can Affect the Eyes" and "Common Medications that Affect the Eye." The former chapter begins with a discussion of diabetes and provides a table, which outlines reasonable guidelines for referring patients for comprehensive ophthalmic examinations. The latter chapter provides an overview of commonly used prescription and over-the-counter drugs that may affect the eye. Besides steroids, antihistamines, antibiotics, and antidepressants are covered in sufficient detail to provide the practitioner reassurance when prescribing these medications to their patients. *The Eye Book* ends with a table that provides an overview of ophthalmic drugs including their side effects.

This reviewer highly recommends this book for physicians and patients and their families. In an age when information is available from a number of sources, some of which are misleading, *The Eye Book* emerges as a credible and valuable guide to understanding eye health. This information will certainly help in preventing eye disease and blindness.

Eve J. Higginbotham, M.D.
Dr. Higginbotham is professor and chair, department of ophthalmology, University of Maryland School of Medicine.

■ ■ ■

Pfiesteria: Crossing Dark Water.

Ritchie C. Shoemaker, M.D., Gateway Press, Baltimore, Maryland, 1998, 350 pages, (softcover).

This reviewer would first like to make the reader aware that this review is based on more than reading this book. I was aware of much of the controversy surrounding the recognition of *Pfiesteria* as it unfolded and had the opportunity to read the author's original diary notes. This book is written in a diary-type format that expands the originally recorded details and contains 46 short chapters and 8 appendices.

Ritchie Shoemaker, M.D., happened to be the right person in the right place at the right time. He has an obvious inquiring mind and trained in molecular biology before medical school. He is a devoted naturalist who was part of a group who built award-winning nature trails in the region along with both nontidal and tidal wetland gardens. For years, Dr. Shoemaker has been a practicing family physician in the area. He saw some of the first cases of *Pfiesteria* on the Eastern Shore and realized it was something he had not previously encountered.

He gives a vivid description of the authorities' attempt to deny the existence of this new phenomenon out of fear of the resultant economic and political injury to the area. Dr. Shoemaker indicates this reaction was no different than that which occurred in Virginia, North Carolina, and Florida when the disease struck patients in those states.

At the time this book was published the existence of *Pfiesteria* had been accepted as a valid occurrence, but the reasons for its presence are still being debated, and the existence of any useful therapy is still being questioned. Dr. Shoemaker proposes what appears to this reader logical theories in both aspects, but he has found little interest by those possessing both the power and the resources to scientifically study his conclusions.

Even though I knew of much of the contents of this book before reading it, it was so interesting I found it difficult to put down. It is easy to read and well written. Maryland physicians, as well as those in Virginia, North Carolina, and Florida are especially urged to read such a book since this disease is on their doorstep. Other physicians would do well to digest its contents so as not only to learn about this newly recognized disease but also to become aware of other political and economic factors that may determine what is acknowledged and written on medical subjects generally.

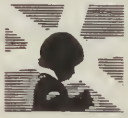
Marion Friedman, M.D.
Editor, *Maryland Medical Journal* ■

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C·M·E·R·C update

The CMERC Update, now in its fourth year, informs all Med Chi accredited CME sponsors about the activities of the Continuing Medical Education Review Committee (CMERC). The CMERC received feedback (both negative and positive) from our accredited sponsors this past year. This exchange of information has kept us all better informed.

In September 1998, the Continuing Medical Education Review Committee (CMERC) and MedChi lost a leader and a friend with the death of Deusdedit L. Jolbitado, M.D. Dr. Jolbiatdo had served as the chairperson of the CMERC since 1997 and had been a member of the committee since 1988. Retired from both Spring Grove and Springfield hospitals, where he practiced psychiatry, he remained active in continuing medical education. As a member of CMERC, he was known for having a strong understanding of continuing medical education on both a practical and didactic level. He will be deeply missed.

In December 1998, the Accreditation Council for Continuing Medical Education (ACCME) surveyed MedChi's CME accreditation program for recognition as an accrediting body. MedChi was the first state organization to be surveyed by the ACCME via a two-way closed circuit television hook up. By way of video conferencing technology, members of the CMERC could remain in Maryland and see and speak with the ACCME reviewers in "real time." The review was accomplished in about an hour, saving both money and physician time. The CMERC expects a re-recognition decision from the ACCME in early spring.

Policies and guidelines for CME surveyors

Over the past several months, the CMERC has been developing policies and guidelines, as well as training materials for accreditation surveyors. The policies and guidelines will provide surveyors with procedures to guide them when they are conducting surveys. By setting forth these guidelines, the members of the CMERC are facilitating the process of training surveyors and increasing the standardization of the survey process. When the MedChi Board of Trustees approves the documents, the policies and procedures will be implemented.

The intrastate accreditation program is dependent on participation from members of MedChi. The CMERC invites physicians who are interested in CME to consider becoming a physician surveyor. Being a surveyor provides an opportunity to visit and interact with other physicians and professionals who are involved in CME activities. For further information, contact Carol Doctrow, manager of Continuing Medical Education at MedChi, ext. 336.

Approval of continuing medical education programs

During the last six months of 1998, the following sponsors were reaccredited:

1. Taylor Manor Hospital
2. American Lung Association of Maryland
3. Baltimore County Medical Association
4. Frederick Memorial Hospital

The following new applicant has been awarded provisional accreditation:

1. St. Mary's Hospital

The CMERC has also been busy reviewing accredited sponsors, traveling to facilities for onsite surveys, reviewing new programs, and participating in educational consultations.

After the passing of Dr. Jolbitado, Abdul Nayeem, M.D., agreed to serve as the chairperson of the CMERC. Dr. Nayeem previously served as chair of the CMERC for two years and has been a member of the committee since 1982. Dr. Nayeem is involved with CME as a committee chair at a sponsoring organization, as a member of the CMERC, and as a member of the AMA's Advisory Committee on CME.

Jules Cahan, M.D., is a member of the Continuing Medical Education Review Committee. ■

The purpose of this newsletter is to inform CME chairpersons, CME committee members, and all interested physicians about the activities of Med Chi's Continuing Medical Education Review Committee (CMERC) and about the rules and procedures that affect the implementation of CME programs in Maryland. When appropriate, news from the ACCME (Accreditation Council for Continuing Medical Education) is included.

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What Your Patients MAY BE READING

A New Germ Theory

Do infections cause heart disease, cancer, Alzheimer's, and psychiatric illnesses?

This very lengthy article begins with the early work of evolutionary biologist Paul Ewald at Amherst College. He believes many of the diseases we have long believed to have genetic or environmental links may actually be the result of infections. He argues that heart disease, cancer, and even mental illness, may actually have virulent attributes. The article examines his theory thoroughly pointing out one of his main arguments as the basic dictates of evolution and survival of the fittest, which in itself makes a case against genetic diseases. A discussion of other diseases once believed to be caused by environmental factors but later found to be linked to infection includes arthrosclerosis.

— *Atlantic Monthly,* February 1999

The Cold Warriors

A long-joked about miracle may soon come to pass: A real cure for the common cold.

This story of biochemist turned immunologist–Timothy Springer–from Harvard Medical School is a detailed account of the hows and whys of finding a cure for the common cold. Starting with how Dr. Springer developed the idea that the key to fighting the cold might lie in the fact that in some rare cases people have white blood cells that don't stick together and don't produce pus. The article examines the idea from infancy through drug company trials. Implications of problems such as the cold's inability to affect any animal other than humans are discussed.

—*Discover,* February 1999

Prevent Varicose Veins

Combine the best of modern medicine with do-it-yourself strategies—and you'll never be bothered by unsightly veins

Readers are first provided with a ten-point self diagnosis quiz with a point system, indicating not very likely, somewhat likely, or very likely to have a problem with varicose veins. At-home remedies are given, including suggestions for avoiding clothes (including support hose) that are tight at the waist, watching posture, and exercising. Also in the at-home remedies category were a few suggestions for medications—one a horse chestnut called Venastat, the other an increase in bioflavonoids and vitamin C. Surgical therapies are also discussed. Very brief explanations of lasers, sclerotherapy, and ambulatory phlebectomy are provided. One patient describes her positive experience with sclerotherapy. A cautionary sidebar warns readers when to seek a second opinion.

—*First,* February 15, 1999

Cholesterol: the new rules

A basic primer for patients, this very readable, light article provides the definitions of LDLs, HDLs, Triglycerides, total cholesterol, and cholesterol ratio. Foods that fight "bad" cholesterol and tips for cholesterol health including weight control, exercise, cessation of smoking, and stress reduction are provided. A review of medications commonly prescribed for cholesterol provides information on what each medication does.

—*Woman's Day,* February 16, 1999

Are you well? 10 Quick Health Checks

Ten quick, self-administered health checks are recommended in this article. These include checking pulse, lungs, teeth, nose, taste, skin to name a few. For example, to test the lungs readers are told to use a match test to determine lung capacity. For the nose, readers are told to make sure they can blindly identify four different smells. A skin check is advised to see if any moles have changed appearance. Each health check warns the reader of what results indicate the need to see a physician.

—*marie claire,* February 1999

Is it Frostbite?

This is a short quirky article that provides useful information on when to seek medical attention following exposure to extreme cold conditions. It is advised that if you experience your skin turning violet or blue, you should proceed to an emergency room, noting that if you've let it turn black you're looking at amputation. The article assures readers who have numb white skin or skin that has turned slightly pink that gradually returning warmth to the skin will be sufficient. Prevention is strongly encouraged.

—*Details,* February 1999

Before You Play Doctor

A review of over-the-counter medications takes the reader on a journey through the medicine cabinet in an effort to teach the harmful side effects of common medicines. For each category—antacids, antihistamines, aspirin, decongestants, ibuprofen, and multisymptom cold formulas—an explanation of active ingredients, possible dangers, and warning signs of a problem are provided.

—*Health,* January/February 1999

The Maryland Medical Journal (MMJ) *is a monthly publication of the Medical and Chirurgical Faculty of Maryland. The journal's goals are educational and informative: the publishing of scientific articles (original research, case studies, and review articles) and other technical information, as well as editorials, letters, special articles (evaluations, position papers, reviews of nonscientific subjects),*

Information for AUTHORS

membership and legislative news, continuing medical education notices, and programs and policies of the faculty.

- ***Letter of transmittal***—The letter of transmittal, which all authors must sign, should include the full names, degrees, titles, and affiliations of all authors, and the name, address, and phone number of the author to whom reprint requests and correspondence should be sent.

  The letter should include a statement to the effect that all authors have participated in the conception and design of the work and in the writing of the manuscript, and that they take public responsibility for it. The authors should attest to the validity and legitimacy of the data, and acknowledge that they have reviewed the final version of the manuscript and approve it for publication.

  In addition, the letter must include a paragraph that transfers copyright ownership to the *MMJ* in the event that the work is published.

- ***Manuscript preparation***—Manuscripts should be submitted to Editor, *MMJ*, 1211 Cathedral Street, Baltimore, MD 21201-5585. Manuscripts must be original material not previously published and not under consideration by another publication. An abstract of 100 to 300 words is required.

  All material, including references, tables, and legends, must be double-spaced. Pages should be numbered. (All abbreviations should be spelled out on first use.) The original manuscript plus one copy should be submitted on standard (8.5" x 11") bond paper. If at all possible, an IBM-compatible disk should be included, with the manuscript entered in a WordPerfect, Multimate, Wordstar, or ASCII format; the transmittal letter should identify the format used.

- ***References***—References are limited to those citations noted in the text. References should be numbered consecutively as they appear in the text and should be kept to a minimum (fewer than thirty-five). Personal communications and unpublished data are not acceptable. At a minimum, references should include names of all authors, complete title of the article cited, name of journal abbreviated according to *Index Medicus* (if abbreviation is not known, journal name should be spelled out fully), year of publication, volume number, and first and last page numbers. Sample references are as follows:

  1. Stevens MB. The clinical spectrum of SLE. Md Med J 1991; 10:875–85.
  2. Ropes MW. Characteristics, manifestations, and pathologic findings. In: Ropes MD, ed. Systemic Lupus Erythematosus. Cambridge, MA: Harvard University Press. 1976; 50–4.

- ***Tables***—Tables should be typed on separate sheets of paper, be numbered, and have a brief descriptive title. Data presented in tables should be self-explanatory and should supplement, not duplicate, the text; the Editor reserves the right to edit tables. Authors should be sure that statistics are consistent in both tables and text.

- ***Illustrations***—Illustrations include material that cannot be set in type. Photographic material must be submitted as high-contrast, glossy prints. Drawings and graphs must be done professionally in india ink on high-grade white drawing paper or be computer generated. Identification—including figure number, the title of manuscript, the name of corresponding author, and arrow indicating top—should be typed on a gummed label and affixed to the back of each illustration. Legends for illustrations should be typed on a separate page with numbers corresponding to those on the photographs or drawings. Recognizable photographs of patients are to be masked and should carry with them written permission for publication. Cost of printing color photographs must be borne by the author.

Checklist

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- ☐ Everything double-spaced.
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- ☐ Permission-to-borrow letters for any previously published illustrations or tables

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  Accepted manuscripts become the permanent property of the *MMJ* and are subject to copy editing. (The *Chicago Manual of Style* and the unabridged *Random House Dictionary of the English Language* are used as style guides.) The corresponding author is sent a reprint order form and galley proofs. S(he) then has 48 hours in which to make minor changes and clear all corrections and changes with co-authors; if proofs are not returned by the specified date, they will be considered approved as typeset. ■

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DHMH Maryland Department of Health & Mental Hygiene

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EPIDEMIOLOGY AND DISEASE CONTROL PROGRAM

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January/February, 1999

Hepatitis C: The Next Decade

Recently, hepatitis C virus (HCV) has been in the news. One reason was the FDA decision obliging blood banks to notify patients who received transfusions from donors now known to be HCV-infected. Pharmaceutical companies purchased full-page ads in The New York Times and other major newspapers, while a series of magazine articles have alerted the public about this "silent epidemic". Finally, the public media have highlighted advances in treatment of HCV, that have progressed to possible "cure" in a sizeable fraction of cases.

As it enters its second decade as a known agent of disease, HCV continues to be of patient interest and concern. After a brief review of other types of viral hepatitis, new information and public health recommendations about HCV are presented. **Please note that acute HCV infection is reportable by health care providers in Maryland to your local health department.**

Classic forms of viral hepatitis have been recognized for many years. "Epidemic" hepatitis A (HAV) is transmitted by the fecal-oral route. This form of hepatitis, while occasionally severe in its acute stages, rarely leads to death by itself. Nevertheless, HAV cases outbreaks continue to occur due to person to person transmission, injecting drug use, and from infected food handlers with poor hygienic habits to foods that are prepared and consumed without further cooking. Travelers may be at risk through food and water consumption. "Serum" hepatitis due to hepatitis B virus (HBV) infection was associated with blood transfusion or other blood contact. However, HBV can also be commonly transmitted both sexually and through injecting drug use, and vertically from a carrier mother to her infant. Other forms of viral hepatitis, such as hepatitis E, have been described in the last decade. Effective vaccines can prevent HAV and HBV infections.

Hepatitis C virus infections were, for many years, regarded only as "non-A, non-B" (NANB) hepatitis. Many cases of transfusion-related hepatitis could not be explained by evidence of HAV or HBV transmitted through the blood product from the donor to the recipient. Before specific testing became available, control of NANB hepatitis through transfusion was limited to screening for "surrogate" markers for this infection. For example, the measurement of levels of the serum enzyme alanine aminotransferase (ALT, formerly SGPT) has been used to screen blood donors for what was an otherwise undetectable infection.

In the late 1980's, using the newly available tools of molecular biology, workers at the NIH recovered RNA sequence fragments obtained from infectious chimpanzee plasma, reconstructed the viral genome, and then translated it into specific proteins from which hepatitis C-specific antibody detection tests were based. It was from

the screening of blood donors and other populations with these new tests that the aetual extent of HCV beeame known. The most reeent CDC recommendations[1] have provided estimates of HCV's impact in the United States.

Based on surveillance studies in selceted US eounties, it is now known that HCV is the leading eause of chronie liver disease. As the tenth leading cause of death among adults in the United States, chronie liver disease aeeounts for approximately 25,000 deaths annually, or approximately 1% of all deaths. Population-based studies from CDC estimate that 40% of chronic liver discase is HCV-related, resulting in an estimated 8,000-10,000 deaths each year. CDC estimates that medieal and work-loss eosts of HCV-related aeute and ehronic liver disease exeeed $600 million annually. HCV-assoeiated end-stage liver disease is the most frequent indieation for liver transplantation among adults. Beeause most HCV-infeeted persons are aged 30-49 years, the number of deaths attributable to HCV-related chronie liver disease could increase substantially during the next 10-20 years as this group of infeeted persons reaches ages at whieh eomplieations from ehronie liver disease typieally oeeur.

Several faetors earry inereased risk of HCV infection, ineluding (in deereasing order of risk):

- Reeeiving blood produets or transplanted tissues from a person known to be HCV-infeeted,
- Any history of injeeting drug use, even if only onee or twiee years ago, or of intranasal cocaine use (sniffing or snorting cocaine), even in those who do not now consider themselves as drug users,
- Reeeiving blood products or transplantation of tissues from a person before July 1992,
- Chronic (more than six months) of hemodialysis treatments,
- Persistent elevation of the serum enzyme ALT;
- Vertieal transmission of HCV from infeeted mother to baby,
- Sharing personal hygiene items like razors and toothbrushes on whieh inapparent blood can be transferred from one person to another, and
- Doeumented episodes of eontaet with blood or body fluids from an HCV infeeted person by health care workers or emergeney serviees workers.

CDC's most reeent recommendations[1] state that persons in these risk groups should be sereened for HCV infeetion, and if found positive, be counseled, medieally evaluated, and (if appropriate) treated.

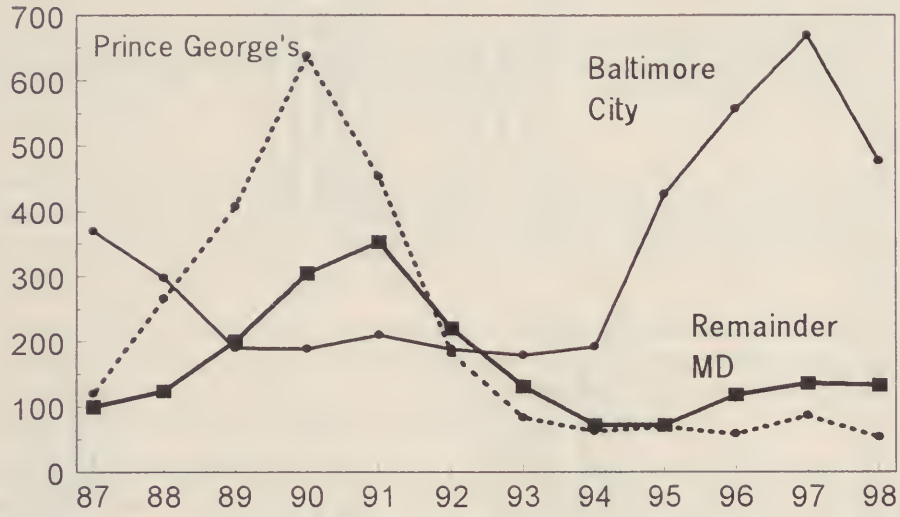
While most HCV infected persons do not know they are infeeted, most will carry the virus all their lives. Most HCV infeeted persons can transmit it to others but will never feel siek from the disease. Others go on to serious liver infeetion, eirrhosis, and occasionally, hepatocellular eareinoma. Aleohol abuse and eertain medieations may aeeelerate liver damage in HCV-infected persons. Studies are now being done to answer the question of who will progress to the more serious types of diseasc, and who will remain generally well.

To refleet the new understanding of this widespread chronic disease, CDC and the Maryland DHMH have updated their faet sheets about hepatitis C (see www.edcp.org or www.ede.gov). Newer diagnostic tests are available for deteeting HCV antibody and antigen and assessing the response to treatment. It is possible to advise those with HCV infeetion on ways to reduce the risk of further damage to their own livers, and to prevent the spread of HCV to others.

Reference:

1. Centers for Disease Control and Prevention. Recommendations for prevention and control of hepatitis C virus (HCV) infeetion and HCV-related ehronic disease. MMWR 1998;47(No. RR-19): 1-39.

Number Primary and Secondary Syphilis Cases, Maryland 1987-1998*



* Estimated as of January 11, 1999

Syphilis Cases Decline in 1998

The number of syphilis cases in Maryland decreased by 25% in 1998! The total number of primary and secondary syphilis cases decreased from 888 in 1997 to 663 in 1998, with the majority of the decline in Baltimore City (see Figure).

Ongoing decrease in the number of syphilis cases in 1999 will depend on widespread syphilis screening, treatment of cases, and investigation and treatment of partners. Maryland is committed to syphilis elimination in line with the national objective.

New Rabies Regulations and Recommendations

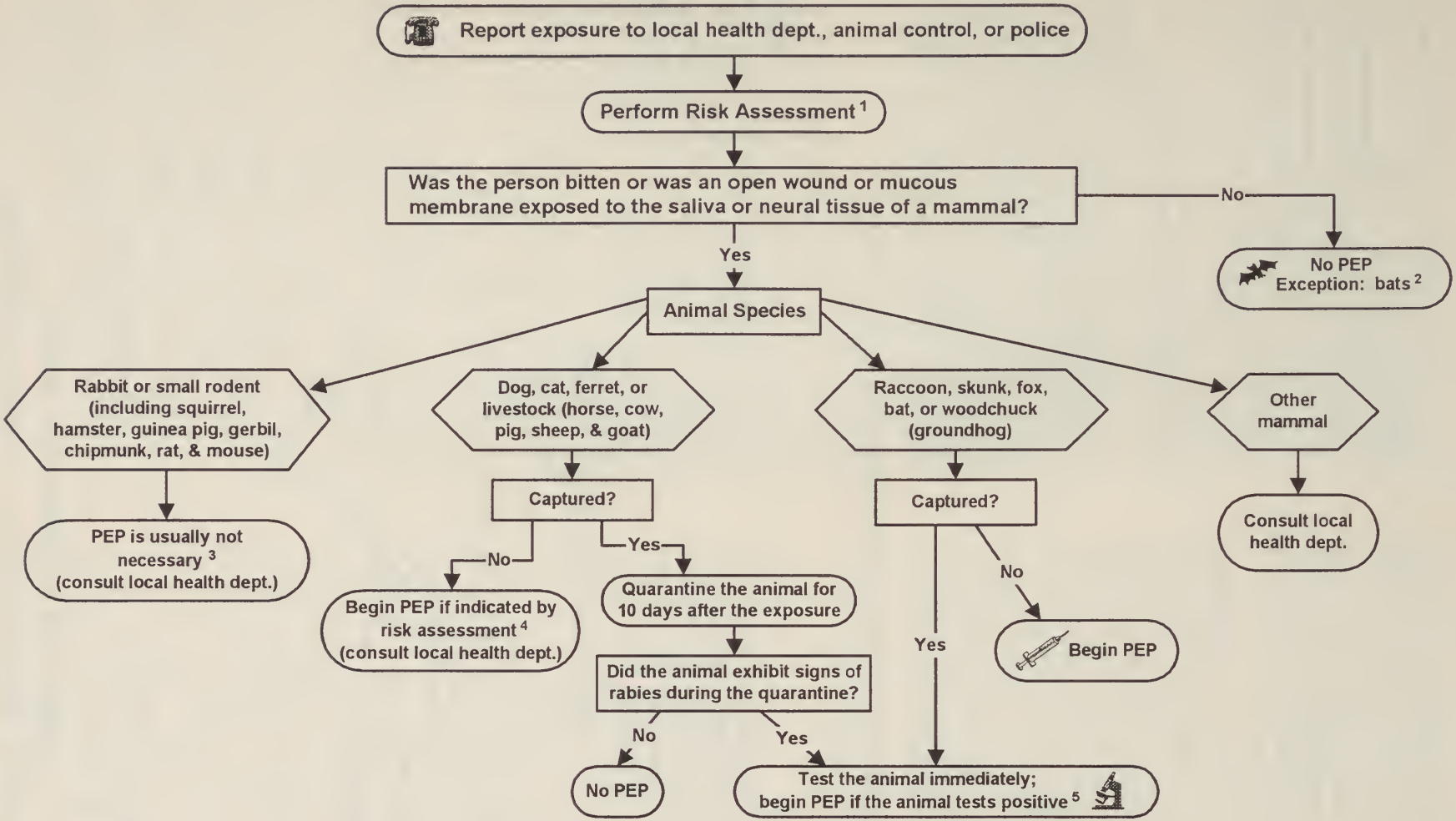
New rabies regulations have been passed in Maryland. The Code of Maryland Regulations 10.06.02, Communicable Diseases--Rabies was published in the Maryland Register, Vol. 25, Issue 18 on August 28, 1998. A Notice of Final Action was published in the Maryland Register on November 6, 1998, with an effective date of November 16.

The Advisory Committee on Immunization Practices (ACIP) has published updated recommendations on preventing rabies in humans. The updated report includes information about a human rabies vaccine approved for use in 1997, recommendations regarding bat exposures, and changes in rabies immune globulin administration. The recommendations are published in the January 8, 1999, issue of MMWR Recommendations and Reports (Vol. 48, No. RR-1). In addition, the Compendium of Animal Rabies Control, 1999 was recently published by the National Association of State Public Health Veterinarians.

The ACIP recommendations and the Compendium will be available through the web site of the Centers for Disease Control and Prevention (http://www.cdc.gov/ncidod/dvrd/rabies). Copies of the documents may also be available through your local health department.

On the following page is an algorithm for rabies postexposure prophylaxis in Maryland. All animal bites and exposures should be reported to your local health department, animal control agency, or police. If you have questions about the need for rabies postexposure prophylaxis, please consult your local health department.

Algorithm for Rabies Postexposure Prophylaxis (PEP) in Maryland



1. Risk assessment includes species, immunization status, health status, type and circumstances of exposure (bite vs. nonbite, provoked vs. unprovoked), and availability for quarantine or testing.
2. PEP is appropriate even in the absence of a demonstrable bite, scratch, or mucous membrane exposure to a bat in situations in which there is reasonable probability that such contact with a bat occurred (e.g., a sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child or mentally disabled or intoxicated person).
3. Rabbits and small rodents are *almost* never found to be infected with rabies and have not been known to cause rabies in humans in the United States. Woodchucks (groundhogs) account for most cases of rabies in rodents.
4. While looking for the animal, begin PEP within 1 day for a cat exposure or 2 days for a dog, ferret, or livestock exposure; discontinue PEP if the animal is found and is either healthy and can be quarantined for 10 days after the exposure or is tested and found negative for rabies.
5. In some situations, it may be appropriate to initiate PEP before test results are available; consult your local health department.

Maryland Department of Health and Mental Hygiene, Epidemiology and Disease Control Program, Center for Veterinary Public Health 12/98

The Johns Hopkins Medical Institutions

All courses at the Thomas B. Turner Building unless otherwise indicated. For information on continuing medical education activities, contact the Office of Continuing Medical Education, 720 Rutland Ave., Baltimore, MD 21205, 410-955-2959, Fax 410-955-0807 (e-mail: cmenet@som.adm.jhu.edu).

Perioperative management, sponsored by the Johns Hopkins University School of Medicine, at Marriott's Marco Island Resort and Golf Club Marco Island, Florida. Credits: Up to 21 Cat 1 AMA credits. Fee: $525/physicians; $550/after 2/5/99; $490/residents, fellows, CRNAs, allied health professionals; $515/after 2/5/99. **Mar. 7–10**

Spectrum of developmental disabilities XXI: prematurity – neuro–developmental perspective, sponsored by The Kennedy Fellows Association; Society for Developmental Pediatrics; Kennedy Krieger Institute: Johns Hopkins University School of Medicine, Division of Child Development, Department of Pediatrics. Fee: $450. **Mar. 22–24**

3rd annual men's health 1999 conference, sponsored by The Johns Hopkins University School of Medicine. Credits: 7.5 Cat 1 AMA credits. Fee: $150/physicians; $100/residents, fellows, allied health professionals. **Apr. 9**

27th annual pediatric trends, sponsored by the Department of Pediatrics, Johns Hopkins University. Credits: 42 Cat 1 AMA credits. Fee: $650/physicians, $695/after 2/12/99; $450/residents, fellows, $495/after 2/12/99. **Apr. 12–17**

Hepato-biliary diseases for practitioners, sponsored by John Hopkins University School of Medicine. Credits: 3 Cat 1 AMA credits. Fee: $40. **Apr. 17**

Eight current concepts in thyroid disease: practical management and critical issues, sponsored by Department of Medicine, Johns Hopkins University. Credits: 8 Cat 1 AMA credits. Fee: $175/physicians; $30/residents, fellows. **Apr. 23**

Annual conference: update on Alzheimer's disease and other dementias, sponsored by Johns Hopkins University School of Medicine, Department of Psychiatry and Behavioral Sciences, at the Renaissance Harborplace Hotel, Baltimore, Maryland. 7 Cat 1 AMA credits. Fee: $150/physicians; $120/psychologists; $95/residents, fellows, allied health professionals. **Apr. 24**

The institute on spirituality and medicine, sponsored by The John Hopkins University School of Medicine. Department of Pastoral Care, The John Hopkins Hospital. Fee: $300/physicians; $175/clergy, residents, allied health professionals. **Apr. 26–28**

14th annual update: frontiers in clinical management of asthma and allergy, sponsored by the Department of Medicine, John Hopkins University and Asthma and Allergy Foundation of America – Maryland Chapter, at the Loews Annapolis Hotel Annapolis, Maryland. Credits: Cat 1 AMA credits. Fee: $395/physicians, $425/after March 15; $275/residents/fellows, $300/after March 15. **Apr. 30–May 2**

44th annual topics in clinical medicine, sponsored by the Department of Medicine John Hopkins University School of Medicine. Fee: $750/physicians; $600/residents, fellows, other professionals. **May 3–7**

Clinical cancer genetics: a practical approach, sponsored by the John Hopkins University School of Medicine and the Mid Atlantic Cancer Genetics Workshop. Fee: $150/physicians; $125/residents, fellows; $100/nurses, allied health professionals. **May 8**

University of Maryland School of Medicine

For each course, additional information may be obtained by contacting the Program of Continuing Education, University of Maryland School of Medicine, Room 14-011, BRB, 655 W. Baltimore St., Baltimore, MD 21201 (410-706-3956), or by calling the phone number listed after a specific program. Fax 410-706-3103.

Glaucoma update at Camden Yards, sponsored by the Maryland Center for Eye Care, University of Maryland School of Medicine, Baltimore, Maryland. Credits: CME credits available. Fee: $150/physicians, PhDs, ODs; $65/residents; $85/fellows. Info: Nancy Cook, 410-328-5929, fax: 410-328-6346, email: ncook@aol.com. **Feb. 26**

Miscellaneous

Management of the HIV-infected patient, sponsored by the Center for Bio-Medical Communication, Inc., at Le Meridien, New Orleans, Louisiana. Credits: 19 Cat I AMA credits. Fee: $575/physicians; $375/physicians-in-training, allied health professionals. Info: 201-342-5300, Fax: 201-342-7555, email: cmeinfo@cbcbiomed.com. **Feb. 26–28**

4th annual NCCN practice guidelines and outcomes data in oncology conference, sponsored by National Comprehensive Cancer Network (NCCN), at Marriott Harbor Beach Hotel, Fort Lauderdale, Florida. Info: 516-777-3800, ext. 300. **Feb. 27–Mar. 2**

Alternative medicine: implications for clinical practice, sponsored by Harvard Medical School Department of Continuing Education, at Boston Marriott Copley Place, Boston, Massachusetts. Credits: 29 Cat 1 AMA credits. Fee: $645/physicians; $395/residents, fellows, allied health professionals. Info: 617-432-1525, email: hms-cme@hms.harvard.edu. **Feb. 28–Mar. 3**

State of the art ultrasound, sponsored by the International Institute for Continuing Medical Education, Inc., at the Walt Disney World Swan, Orlando, Florida. Credits: Cat 1 AMA credits. Fee:$750/physicians; $495/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 4–7**

3rd annual liver symposium, sponsored by the Office of Continuing Medical Education, Virginia Commonwealth University, Medical College of Virginia Campus, at the Omni Richmond Hotel, Richmond, Virginia. Credits: 8 Cat 1 AMA Credits. Info: Nancie Mervis, 1-800-413-2872 or 804-828-3640, Fax: 804-828-7438. **Mar. 6**

14th annual postgraduate magnetic resonance imaging course, sponsored by The University of California, San Diego, at The Hotel Del Coronado, San Diego, California. Credits: 28 Cat 1 AMA credits. Fee: $695/physicians; $495/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar.7–12**

Neuro/ENT imaging: review and update, sponsored by The International Institute for Continuing Medical Education, Inc., at Boca Raton Resort and Club, Boca Raton, Florida. Credits: 26 Cat 1 AMA credits. Fee: $750/physicians; $495/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 11–14**

Problem solving in diagnostic radiology, sponsored by The University of Maryland, at the Fountainbleu Hilton, Miami, Florida. Credits: Cat. 1 AMA credits. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 11–14**

Miscellaneous (continued)

MRI at Snowbird, sponsored by The University of California, San Diego, at Cliff Lodge, Snowbird, Utah. Credits: 21 Cat 1 AMA credits. Fee: $625/physicians; $400/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 14–19**

6th annual breast imaging and update in general diagnostic imaging: neuroradiology, abdominal, and MR imaging, sponsored by The University of Chicago, at Boca Raton Resort and Club, Boca Raton, Florida. Credits: 34.5 Cat 1 AMA credits (18.75 – mammography). Fee: $750/physicians; $500/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 15–19**

Clinical infectious disease'99, sponsored by the Center for Bio-Medical Communication, at the Waldorf-Astoria Hotel, New York, New York. Credits: 18.5 Cat 1 AMA credits. Fee: $645/physicians; $475/physicians-in-training, allied health professionals. Info: 201-342-5300, Fax: 201-342-7555, email: cmeinfo@cbcbiomed.com. **Mar. 19–21**

Thoracic imaging 1999, sponsored by The Society of Thoracic Radiology, at the Ritz Carlton Resort Hotel, Amelia, Florida. Credits: 37.75 Cat 1 AMA credits. Fee: $750/physicians; $450/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 25–29**

Breast imaging: optimizing your practice and exceeding "standards of care," sponsored by The International Institute for Continuing Medical Education, Inc., at the Four Seasons, Atlanta, Georgia. Credits: 25 Cat 1 AMA credits. Fee: $750/physicians; $550/others. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Mar. 26–28**

12th annual spring invasive radiology, sponsored by The University of California, San Diego, at the Hotel Del Coronado, San Diego, California. Credits: 6.25 Cat 1 AMA credits. Fee: $150/physicians; $115/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 3**

19th annual resident's radiology review, sponsored by The University of California, San Diego, at the Hotel Del Coronado, San Diego, California. Credits: 49 Cat 1 AMA credits. Fee: $750/physicians; $500.00/residents, fellows, technologists, allied health personnel. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 4–9**

4th annual breast imaging and interventions, sponsored by The University of California, San Diego, at the Hotel Del Coronado, San Diego. Credits: 15 Cat 1 AMA credits. Fee: $450/physicians (practicing physicians attending RRRC: 64 hrs., $375); $275/residents, fellows, technologists, allied health (if attending RRRC: 64 hrs., $250). Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 9–11**

Head and neck imaging: a case review tutorial, sponsored by The International Institute for Continuing Medical Education, Inc., at the Ritz-Carlton Buckhead, Atlanta, Georgia. Credits: Cat 1 AMA credits. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 15–18**

The missed or delayed diagnosis of breast cancer: understanding the causes and developing effective risk management strategies, sponsored by The International Institute for Continuing Medical Education, Inc., at The Plaza Hotel, New York, New York. Credits: 18 Cat 1 AMA credits. Fee: $695/physicians; $450/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, **Apr. 16–18**

Miscellaneous (continued)

website: www.ryalsmeet.com.

Internal derangement of joints: advanced and intensive MR imaging, sponsored by The International Institute for Continuing Medical Education, Inc., at Westin Galleria, Dallas, Texas. Credits: 19.5 Cat 1 AMA credits. Fee: $695/physicians; $495/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 16–18**

Combined physicians/pharmacists conference, sponsored by the Office of Continuing Medical Education, Virginia Commonwealth University, Medical College of Virginia Campus, at Williamsburg, Virginia. Info: Nancie Mervis, 1-800-413-2872 or 804-828-3640, Fax: 804-828-7438. **Apr. 23–25**

Advanced cardiac and oncologic nuclear medicine for the radiologist, sponsored by The University of Florida, College of Medicine, at Disney's Coronado Springs, Orlando, Florida. Credits: 8 Cat 1 AMA credits. Fee: $200/physicians; $150/residents, fellows, technologists, UF Alumni. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 24–25**

11th annual radiology course: "what you need to know," sponsored by The University of Florida, College of Medicine, at Disney's Coronado Springs, Orlando, Florida. Credits: 50 Cat 1 AMA credits. Fee: $755/physicians; $575/residents, fellows, technologists, full-time military, UF radiology alumni. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 25–30**

PHYSICIAN'S RECOGNITION AWARD

For the months of August-November 1998, the physicians listed below received the American Medical Association (AMA) Physician's Recognition Award. Established in 1968, the award's purpose is to encourage physician participation in continuing medical education and to recognize those physicians who have voluntarily completed programs of continuing medical education.

Medhat Sobhi Abu-Shaaban
Gurminder S. Ahuja
Vasiliki M. Anvari
David R. Arday
Stewart L. Baker
Suraiya Begum
David M. Bishai
Turner Camp
Leona K. Choo-Kang
David A. Clements
Mercedita S. Conanan
Cefie S. De La Paz
John N. Diaconis
Paul A. Dorn
Robert F. Draper
Richard P. Dutton
Israel S. Eckman
Kofoworola Ekadi
Jack R. Epstein
Herman J. Flax
Ivan J. Fuss
Robert A. Goralski
John C. Gordon
Andrew A Greenberg
Robert I. Haddad
John T. Hagenbucher
Sandra M. Hurtado
Robert A. Ingram
Martha M. Irabien
Christian E. Jensen
Ronald E. Keyser
John H. Klippel
Robert B. Kroopnick
Christine I. Kwik
George E. Linhardt
Martin L. Lipson
Glenn A. Loomis
Angelo J. Lucco
Mukesh P. Luhar
Jeffrey A. Matzoni
Mark A. Mazer
Margaret F. Merrick
Vinod K. Misra
Ebondo Mpinga
Paulo J. Negro
Julio C. Novoa
Diane J. Orlinsky
Jolan S. Rhodes
Joel L. Rosenthal
Ibrahim I.M. Salih
Allan Z. Schwartzberg
Elisabeth M. Sethi
Sidney Shankman
Robert B. Shearin
Kristi D. Silver
Bruce M. Smoller
Albert J. Strauss
Kelli A. Strauss
Nguyen V. Ta
Robert J. Tanenberg
James G. Taylor
Alexander O. Vortmeyer
Chas A. Winternitz
William C. Wessells
James J. Woytash
Alberto R. Yataco
Daniel S. Yuan

Miscellaneous (continued)

Society for Biomaterials 25th annual meeting & exhibition, at Rhode Island Convention Center Providence, Rhode Island. Info: 612-927-8108, website: www.biomaterials.org. **Apr. 28–May 1**

State of the art ultrasound, sponsored by The International Institute for Continuing Medical Education, Inc., at the Four Seasons Hotel, Atlanta, Georgia. Credits: Cat 1 AMA credits. Fee: $695/physicians; $495/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 29–May 2**

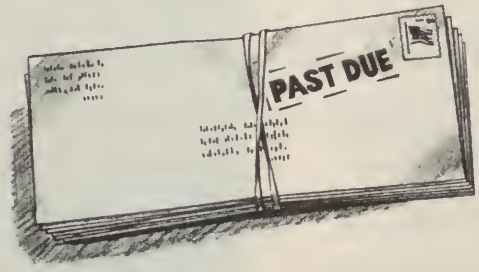
Harvard-Macy scholars colloquium, sponsored by the Office of Continuing Medical Education Virginia Commonwealth University, Medical College of Virginia Campus, at The Jefferson Hotel, Richmond, Virginia. Info: Nancie Mervis, 1-800-413-2872 or 804-828-3640, Fax: 804-828-7438. **Apr. 30–May 1**

4th annual mammography update, sponsored by The University of Florida, College of Medicine, at Disney's Coronado Springs, Orlando, Florida. Credit: 15 Cat 1 AMA credits. Fee: $345 physicians; $265/residents, fellows, technologists, full-time military, UF radiology alumni. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 30–May 2**

Breast imaging from A to Z: how to read like the experts, sponsored by The International Institute for Continuing Medical Education, Inc., at the MGM Grand, Las Vegas, Nevada. Credits: Cat 1 AMA credits. Fee: $695/physicians; $495/residents, fellows, technologists. Info: Ryals & Associates, 770-641-9773, Fax: 770-552-9859, email: Webmaster@Ryalsmeet.com, website: www.ryalsmeet.com. **Apr. 30–May 2**

27th annual Hans Berger symposium, sponsored by the Office of Continuing Medical Education, Virginia Commonwealth University, Medical College of Virginia Campus, at Omni Richmond Hotel and MCV Campus, Richmond, Virginia. Credits: 13 Cat 1 AMA credits. Fee: $375. Info: Nancie Mervis, 1-800-413-2872 or 804-828-3640, Fax: 804-828-7438. **May 16–18**

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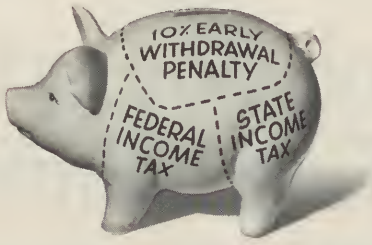
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ORIGINAL ARTICLES

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MARCH/APRIL 1999

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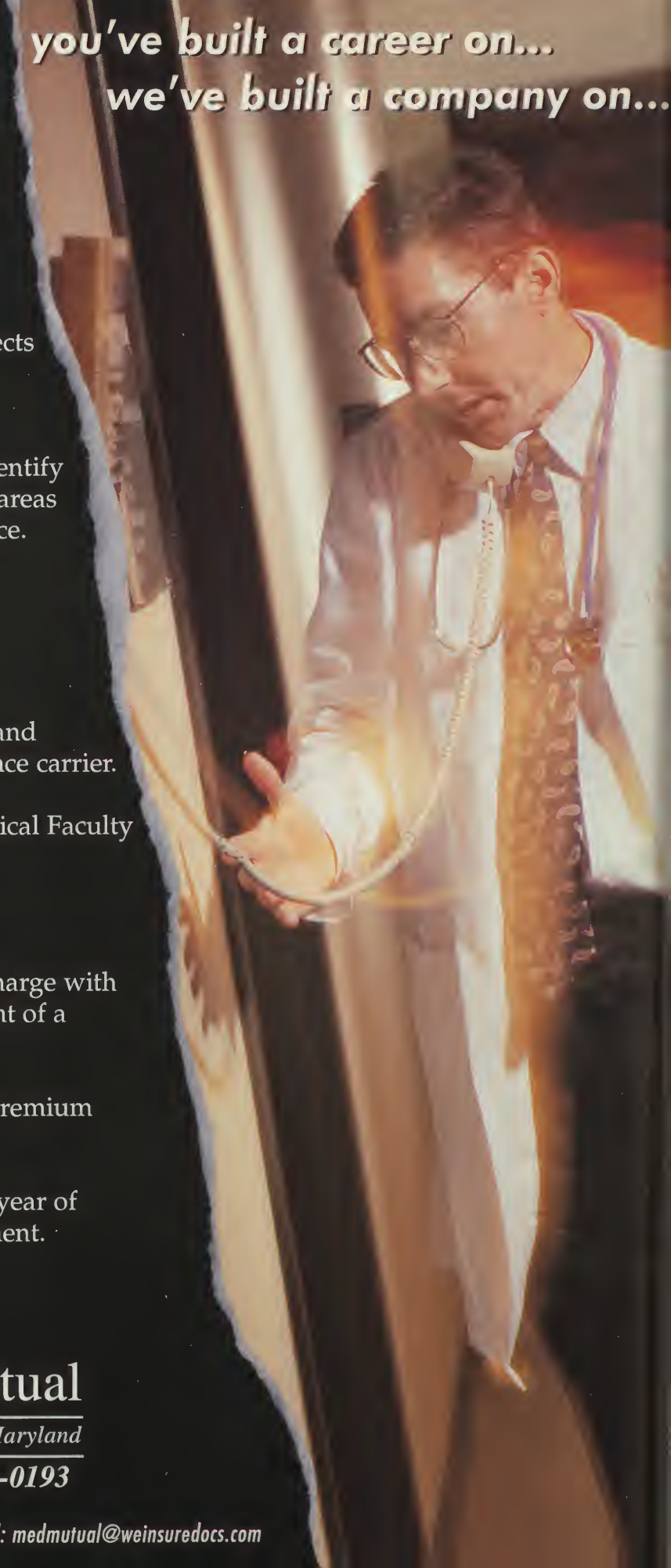
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October 15 - 17, 1999

1999 MedChi Convention & Bicentennial Gala

Sheraton Fountainebleau Ocean City, MD

The 1999 MedChi Convention will examine topics ranging from genetics to privacy and confidentiality to end-of-life issues. We have gathered speakers who are at the forefront of both the great technological changes overtaking our society and those who struggle to remain ethical in the face of them. Please note the following is a brief excerpt from this year's program (information is subject to change).

Friday, October 15

9:30 - 11:00 House of Delegates

11:00 - noon

Woodward History of Medicine Lecture

Sherwin B. Nuland, MD, author and Clinical Professor, Yale Medical School

12:00 - 1:30

Remembering Our Beginnings

As part of our Bicentennial celebration, Joseph Gagliardi, MD, will impersonate Dr. Dobbs, a colonial period physician. Lunch will be provided.

1:30 - 3:00 Part I

3:30 - 5:00 Part II

Privacy and Confidentiality: Navigating an Ethical Whirlpool

The Honorable Ben Cardin (invited), The Honorable Casper Taylor, Harol Eist, MD, past President of the American Pediatrics Association, and Lawrence Gostin, JD, LLD, Georgetown University School of Law (invited)

6:00 - 8:00

Cocktail Reception

Saturday, October 16

7:30 - 9:00

Comprehensive Financial Planning

9:00 - 11:00 Part I

11:30 - 12:30 Part II

Recreating Ourselves: Ethical Ramifications of Genetic Research

Jeremy Rifkin, author, activist and philosopher, J. Craig Venter, PhD, President & Director, The Institute for Genomic Research

Saturday, October 16 *(cont.)*

12:30 - 2:00

Fraud and Abuse Compliance Luncheon

2:00 - 5:00 ***House of Delegates Meeting***

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LETTERS TO THE EDITOR

Marfan syndrome and sudden death

I enjoyed reading Gott's article entitled "Antoine Marfan and his syndrome: one hundred years later".[1] Marfan syndrome received considerable lay notoriety because it allegedly affected the sixteenth president of the United States, Abraham Lincoln, violin virtuoso Niccolo Paganini, and the famous composer-pianist Rachmaninov.[2]

I shared Gott's frustration that the diagnosis of rupture of a large Marfanoid aortic aneurysm in the renowned playwright Jonathan Larsen (who conceived and produced the musical "Rent") was missed after repeated visits to the emergency departments for severe chest pains.[1] Rupture of an aneurysm of the ascending aorta is the most serious cardiovascular complication of Marfan syndrome.[2] Its presence has not only been misdiagnosed but also undiagnosed. It is most unfortunate that hundreds of Marfan patients with life-threatening aortic aneurysms still go undiagnosed every year.[1] For example, in 1986, Flo Hyman, star of the 1984 U.S. Olympic silver medal winning volleyball team, died suddenly between sets of a volleyball match in Japan. Autopsy showed aortic dissection with rupture. Despite all the physical examinations she received in her athletic career, only after her death was it realized that she was affected with the Marfan syndrome.[3]

Chris Patton, a University of Maryland basketball player, died suddenly at age 21 during a pickup game of basketball in 1976. Autopsy showed a ruptured aorta and the Marfan syndrome.[3] During his life the diagnosis of Marfan syndrome had not been suspected. As a matter of fact, the villain Jefferson Hope in Sherlock Holmes' first adventure, "A Study in Scarlet," as described by Sir Arthur Conan Doyle in 1896, also died of a thoracic aortic aneurysm.[2] Inasmuch as the story was written before 1886, Doyle therefore actually described Marfan syndrome more than a decade before Marfan did.[4]

As Gott[1] mentioned in his article, there is now an excellent operation for a problem that was so difficult to manage 25 years ago. Patients with the Marfan syndrome can undergo elective aortic root replacement with an operative risk well below 5%, and have an excellent likelihood of a normal life expectancy.[1,5] Therefore, it is essential that a timely diagnosis of aortic aneurysm be made in these patients.

Tsung O. Cheng, M.D
Dr. Cheng is a professor of medicine in the department of medicine, division of cardiology, The George Washington University Medical Center.

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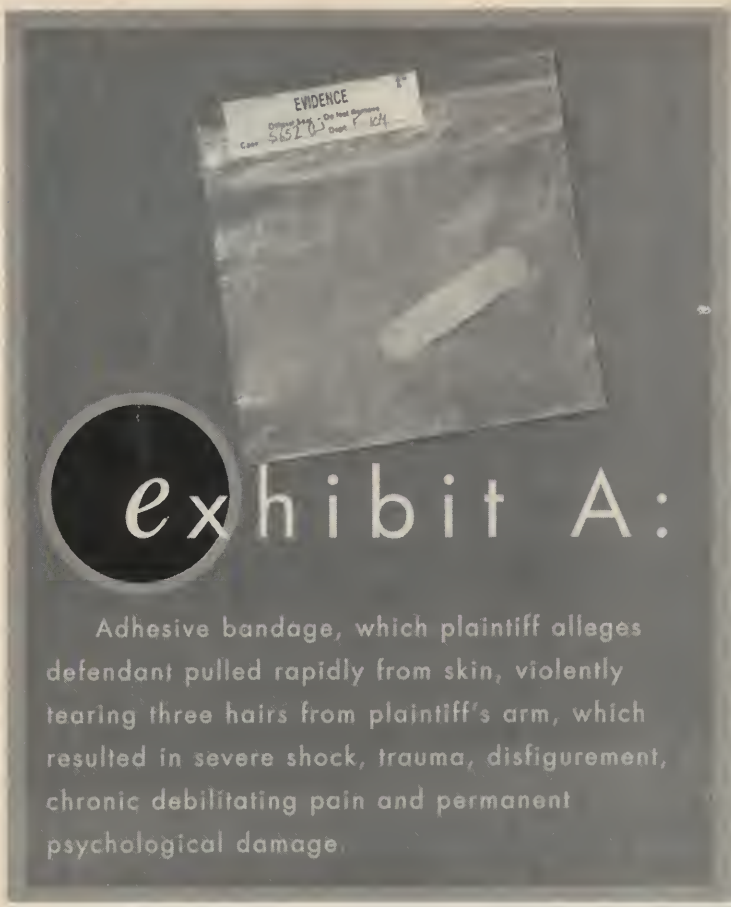


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Minimally invasive parathyroidectomy utilizing a gamma detecting probe intraoperatively

John A. Singer, M.D., Armando Sardi, M.D., Gail Conaway, R.N., and Ethan J. Spiegler, M.D.

From St. Agnes Healthcare in Baltimore, Maryland, where Drs. Singer and Sardi are in the department of surgery, Dr. Spiegler is in the division of nuclear medicine, and Ms. Conaway is a clinical research coordinator.

ABSTRACT: *The most common pathologic finding in primary hyperparathyroidism is a single adenoma. Traditionally, all four glands have been explored during surgery for primary hyperparathyroidism. With the advent of accurate localizing diagnostic studies, such as the sestamibi scan, some surgeons are now recommending single-gland exploration. In addition, when a sestamibi scan is performed the day of surgery, a gamma detecting probe can be used intraoperatively to direct the dissection. Although an experienced surgeon will successfully locate the abnormal gland 95% of the time with the traditional approach, this new technique results in a smaller incision with better cosmetic results as well as decreased operative time. Our initial experience with eight cases utilizing this technique is presented.*

Primary hyperparathyroidism presenting with elevated serum calcium and parathyroid hormone levels has been diagnosed more commonly since the introduction of multiple chemical analysis. Most patients with this condition are asymptomatic at the time of diagnosis compared with those diagnosed before the advent of multi-chem tests. Solitary adenomas comprise 85% to 90% of the pathologic findings in primary hyperparathyroidism, while four-gland hyperplasia is responsible for an additional 10% to 15%. Rare cases of parathyroid carcinoma and multiple adenomas are occasionally found. Rather than a diagnosis of exclusion, as was the case in the past, hyperparathyroidism can now be definitively diagnosed preoperatively. The ability to measure serum parathyroid hormone levels and to perform parathyroid scans has made

Reprints: *Dr. J. Singer, St. Agnes Hospital, 900 Caton Ave., Baltimore, MD 21229*

this possible. Technetium-thallium subtraction scans had been utilized to localize the enlarged gland. More recently, parathyroid scans utilizing technetium 99 labeled sestamibi (Cardiolite-Dupont) have shown a greater sensitivity and specificity in the localization of abnormal parathyroid glands.[1]

A positive scan with an enlarged parathyroid gland visible in the left side of the neck is shown in **Figure 1**. Neck exploration, however, remains the gold standard in diagnosing and localizing the cause of primary hyperparathyroidism and is successful in greater than 95% of cases.

Traditional surgical teaching required exploration of all four parathyroid glands to minimize the chances of missing a second adenoma or hyperplasia of all glands. With the ability to more accurately diagnose hyperparathyroidism preoperatively and to localize the one enlarged gland, most often encountered, some authors have questioned the necessity for four-gland exploration. A more extensive operation, this has greater potential for injury to the recurrent laryngeal nerve or permanent hypoparathyroidism.



Figure 1. Sestamibi scan localizing a left-sided parathyroid adenoma (arrow). Other areas of uptake include the salivary glands and the oral cavity.

The next step in the evolution of parathyroid surgery has been to improve the intraoperative localization of the parathyroid adenoma. Some authors have recommended intravenous methylene blue to stain the parathyroids.[2] This, however, often stains the whole patient for a period of time and still requires a fairly extensive exploration. The immediate preoperative injection of technetium-labeled sestamibi with the intraoperative use of a gamma detecting probe has allowed for a minimally invasive approach to parathyroid surgery.[3-5] We present our preliminary results using this technology.

Table 1. Intraoperative gamma counts in a patient with a single left lower parathyroid adenoma.

	RUL	LUL	RLL	LLL
pre-incision	5660	5390	5300	6275
mid-operation	4620	4550	4750	5130
post-excision	4010	3980	3880	3960

counts per second

ex vivo counts of enlarged parathyroid gland 1680 cts/sec.

Materials and methods

The patient is injected with 20 mCi of Tc-99 labeled sestamibi one to two hours before the planned operative procedure and the neck is scanned. If there is increased uptake of tracer in one location, this area is marked on the skin and the patient is sent to the operating suite. A gamma detecting probe is used before any incision is made and counts in all four quadrants of the neck near the trachea are recorded. The desired result is a 500 count/sec. step-up in the quadrant in which the abnormal parathyroid is located. A 2.5 cm or 3 cm incision is then made over this area. The operation proceeds in the usual manner with incising the platysma and then splitting the strap muscles in the midline exposing the thyroid. The gamma probe is used throughout the procedure to direct the dissection toward the parathyroid gland. Once the gland is removed, the gamma probe is used to measure the activity in the *ex vivo* parathyroid. This should be greater than 700 counts/sec. and at least 20% of the new post-excision background activity. The neck is then scanned again. If the abnormal parathyroid has been successfully removed, the background counts in all four quadrants should be similar. The incision is closed in the usual fashion.

If the sestamibi scan does not localize one specific area of increased uptake, then a standard four-gland exploration is performed.

Results

A total of eight patients have been operated on utilizing this technique at St. Agnes Hospital. Preoperative calcium levels ranged from 11.1 to 14.3 gms/dl, and intact PTH levels up to 25 pmol/l (normal range is 1 to 5 pmol/l). The sestamibi scan localized a single adenoma in each case. General anesthesia was used in all patients. Seven of the patients were discharged on the day of surgery or the following day. The patient whose preoperative calcium was 14.3 remained hospitalized for two days postoperatively. Calcium levels returned to normal in all patients.

This technique was completely successful in six of the eight patients (i.e., the quadrant localized by the sestamibi scan showed a significantly elevated gamma count on the operating table; the probe directed the dissection to the abnormal gland; the excised gland had a count above 700 counts/sec.; and the postexcision new baseline count was similar in all four quadrants). The gamma probe results for one of the patients are shown in **Table 1**. **Figure 2** is a post-operative photograph of one of the patients illustrating the small incision that can be utilized with this technique. In two of the patients, the technique was partly successful in that the scan performed on the day of surgery did localize the abnormal gland, but the intraoperative gamma probe counts were similar in all quadrants so intraoperative localization with the probe was not possible. The *ex vivo* counts on the excised enlarged glands, however, were over 700/sec.



Figure 2. Postoperative photograph of healed incision after parathyroidectomy.

Discussion

The most common finding in primary hyperparathyroidism is that of a single adenoma in 85% to 90% of patients. Neck exploration by an experienced surgeon will result in the abnormal gland(s) being found, removed, and the patient cured of hyperparathyroidism in 95% of the cases. There is controversy in the surgical literature, however, concerning the necessity of exploring all four glands. Shen et al[6] believe it is important to explore all four glands because in their study only 71% of single adenomas were successfully detected by sestamibi scanning. Borley,[7] Malhotra,[8] and Martin,[9] on the other hand, feel that single gland exploration after sestamibi localization is adequate. Russell et al[10] take a middle-of-the-road approach and explore the ipsilateral gland but not the contralateral neck, while Casas[11] showed that preoperative scanning resulted in a significantly shorter operation even when all four glands are viewed.

Several intraoperative techniques have been described to help predict the successful outcome of surgery. Irvin[12] has utilized a drop in the intraoperative determination of PTH by a "quick assay" to show that the offending gland has been removed. Chapuis et al[13] measure intraoperative urinary cyclic AMP in addition to PTH levels to monitor for successful removal of the enlarged gland. These procedures help to predict the outcome of the operation but in themselves do not help to localize the abnormal parathyroid. Derom et al[2] has infused methylene blue preoperatively to help in the localization of the parathyroids but the exploration still needs to be fairly extensive because the blue dye has to be directly visualized.

If one believes, as we do, that single-gland exploration is adequate in most patients, then techniques to speed the intraoperative localization make sense. The injection of technetium-labeled sestamibi approximately two hours before surgery and the use of a gamma probe intraoperatively allow the surgeon to guide the dissection directly to the involved gland resulting in less dissection, and a shorter operative time.[4,5] This approach has been utilized with success by several authors. Some investigators are now performing parathyroidectomy

with this technique under local anesthesia and intravenous sedation, with same-day discharge.

Our preliminary experience confirms that of other investigators. Patients with primary hyperparathyroidism can be successfully treated with local neck exploration. This results in a shorter hospitalization, lower cost, better cosmesis and allows the patient to return to normal activity within days of the procedure and with minimal morbidity.

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Posterior mediastinal mass in a young male with chronic hepatitis B infection

Brian J. Fortman, M.D., and Douglas P. Beall, M.D.

From the department of radiology and radiological science, The Johns Hopkins Hospital, Baltimore, Maryland.

Clinical history

A 29-year-old white male presented to the emergency department with confusion, fecal incontinence, and increasing abdominal girth. Records revealed a history of hepatitis B infection acquired through a blood transfusion at age 11. His history was also remarkable for peptic ulcer disease and two episodes of hepatic encephalopathy. On physical exam his sclera were icteric, a fluid wave was noted in the abdomen, and his spleen was palpable below the left coastal margin. Admission chest x-ray revealed a large posterior mediastinal mass not noted on his last exam one year earlier.

Imaging findings

Anteroposterior chest x-ray reveals a large lobulated posterior mediastinal mass which extends superiorly into the right paratracheal area (**Figure 1**).

Subsequent computed tomography (CT) scan shows a large serpiginous mass of enhancing varices which displaces the heart anteriorly. The air-filled esophageal lumen can be seen displaced anteriorly and to the left (**Figure 2A**). A tomogram approximately 2.5 cm below that shown in Figure 2A shows the mass of varices extending through the esophageal hiatus and surrounding the descending thoracic aorta. The esophagus can now be seen with oral contrast within the lumen. The suggestion of ascites below both hemidiaphragms is now apparent

Reconstruction of the spiral CT data taken in the coronal plane just posterior to the left ventricle shows the typical manifestations of advanced hepatic cirrhosis. The liver is small and nodular. There is



Figure 1. AP view of the chest shows a large lobulated posterior mediastinal mass extending superiorly into the right paratracheal region (black arrowheads).



Figure 2A. Chest CT demonstrates a large enhancing mass of varices posterior to the heart (open black arrow). The esophageal lumen can be seen displaced anterior and to the left (white arrow).



Figure 2B. Chest CT demonstrates varices at the level of the esophageal hiatus displacing the contrast filled esophagus (white arrow) and surrounding the descending aorta (black arrowhead). Ascites is seen under bilateral hemidiaphragms (white arrowheads).

marked splenomegaly from portal hypertension. A large amount of ascites is seen under the right hemidiaphragm. The large mass of enhancing varices is seen occupying the inferior posterior mediastinum (**Figure 3**).

Diagnosis

Hepatitis B cirrhosis with portal hypertension and marked esophageal varices.

Discussion

Esophageal varices are one of the most common and most dangerous sequela of end-stage cirrhotic liver disease. Along with thrombocytopenia, hepatorenal syndrome, and spontaneous bacterial peritonitis, esophageal varices are associated with a high degree of morbidity and significant mortality in this patient population.

The overall rate of bleeding from varices is approximately 30% and initial bleeding most often occurs within the first year after diagnosis.[1] Predictors indicating risk of bleeding include severity of liver disease, size of varices, and endoscopic color changes. It is believed that when varices reach a large size (over 5mm) the probability of an acute bleed increases substantially.[2] Even with the application of various methods of prevention and treatment, such as vasoactive pharmaceuticals, sclerosing and banding, and more recently transcutaneous intrahepatic portosystemic shunt (TIPS) procedures, patients with esophageal varicies often do poorly. Of patients with actively bleeding varicies, a third or more will die during hospitalization, at least a third will rebleed within six weeks, and no more than a third will survive beyond one year.[3] Due to the serious nature of this condition accurate and early diagnosis is important for decision making. Endoscopy can serve as both a diagnostic and therapeutic modality in many cases. However, in patients with extremely large varices, as in this case, noninvasive radiologic methods such as CT, magnetic resonance imaging (MRI), or barium upper GI series may be safer alternatives. CT may demonstrate varicies as enhancing vascular

channels associated with the esophageal wall. In some instances subtle varicies may appear as esophageal wall thickening with variable enhancement. CT is a valuable method in evaluating varicies because of the ability to detect other sequele of chronic liver disease such as ascites and other signs of portal hypertension. Barium swallow may also diagnose subtle varicies. They appear as serpigenous, slightly nodular filling defects when seen en face, and as scalloped nodular intramural defects when seen tangentially. Optimal visualization is by single contrast exam with the esophagus partially collapsed. Moderate air distension of the esophagus may smooth or flatten submucosal varices and render them invisible. Some traditional provocative maneuvers such as the Trendelenburg position and the valsalva maneuver may make subtle varicies easier to visualize.[4]

Esophageal varices are a less common cause of posterior mediastinal mass on chest x-ray. The classic differential usually does include gastrointestinal causes such as hiatus hernias, which are quite common and are diagnosable on routine posterior-anterior (PA) chest film. Other GI causes known to present as posterior masses include duplication cysts and conditions that dilate the mid-to-distal esophagus. These entities usually present with dilation of the distal esophagus and occasionally an air-fluid level. On PA chest x-ray the azygoesophageal line is usually displaced to the right. Entities known to cause this appearance include distal stricture or cancer, achalasia, and scleroderma. Other important causes of posterior mediastinal masses include entities of neurogenic and vascular origin.

Neurogenic tumors such as neurofibromas, neurolemmomas, and para-ganglionomas may present as paraspinal masses. They are usually unilateral and well defined and may be associated with rib or vertebral body erosions. In younger patients, tumors such as neuroblastoma and ganglioneuroma must be a consideration. Other spinal neoplasms, although less common, may be included in this category. Tumors such as osteochondroma, aneurysmal bone cyst, chondrosarcoma, Ewing's tumor, and metastasis may occur in a paraspinal location.

The most important vascular etiology to be excluded in the work up of a posterior mediastinal mass is an aneurysm of the descending aorta. These are characteristically left of midline and silhouette out the normal aortic contour. In this scenario contrast enhanced CT of the chest can confidently make the diagnosis and confirm or exclude other etiologies.

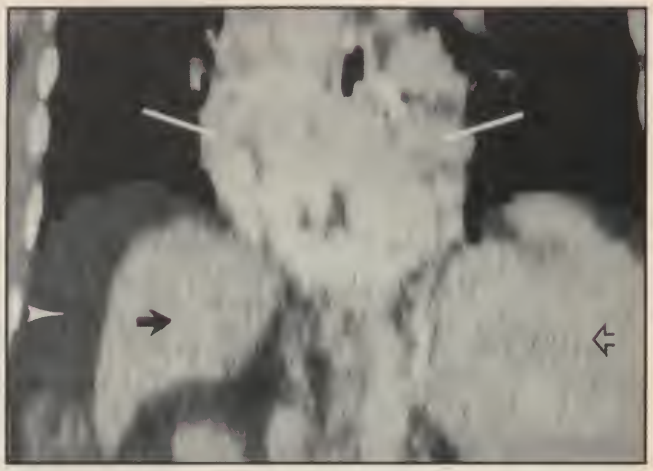


Figure 3. CT reconstruction in the coronal plane at the level of the posterior mediastinum shows the enhancing varices (white arrows). A small cirrhotic liver (black arrow) and the other manifestations of portal hyper-tension, splenomegaly (open black arrow) and ascites (white arrowhead), are also apparent.

Other more rare causes of posterior mediastinal masses that have been observed include neurenteric cysts, Bochdalek's hernia, pancreatic pseudocysts, vertebral osteomyelitis, mediastinal lipomas, and extramedullary hematopoesis in patients with congenital or acquired anemias.

PA and lateral chest x-ray is a good screening tool for detection of masses in any mediastinal compartment. Appearance, location, and additional clinical information can infer some of the above entities. However, it is often necessary to acquire additional imaging modalities such as CT to arrive at a definitive diagnosis.

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The impact of a geriatrics evaluation and management unit compared to standard care in a community teaching hospital

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ABSTRACT: *A prospective, controlled trial was initiated to determine whether an acute inpatient geriatrics unit located in a community-based teaching hospital provides better care for frail elderly patients at less cost than conventional medical-surgical units.*

Patients 75 years old or older admitted to the hospital were prospectively assessed over a seven-month period. Inpatient geriatrics unit subjects experienced a reduction in length of stay (6.0 vs 7.1 days; $p=0.06$), polypharmacy (mean net change in number of medications in the inpatient geriatrics unit was -1 compared to +2 on the other units; $p<0.001$), and overall hospital charges (reduced by $3,819; $p<0.01$).

These data support the notion that acute inpatient geriatrics units may be used to target more complex, frail, older patients and have outcomes as good or better than traditional care.

Older patients are at high risk of experiencing functional decline during the course of an acute illness requiring hospitalization.[1-6] This functional decline may lead to serious sequelae including increased lengths of stay in the hospital and costlier hospitalizations.[7,8]

Developing interventions to prevent functional decline in the hospitalized elderly has become particularly important because patients aged 65 years and older account for 31% of acute care hospital admissions in the United States and 45% of hospital expenditures for adults.[9]

One increasingly popular approach to improving outcomes and reducing health care costs is the development of acute inpatient geriatrics units.[10-13] It has been demonstrated in some academic settings that acute inpatient geriatrics units improve outcomes and reduce health care costs

when applied to appropriately targeted patients by creating innovative environments of care and including interdisciplinary assessment and management of acutely ill patients.[14-21]

The hypothesis behind this prospective study was that an acute inpatient geriatrics unit (geriatrics evaluation and management [GEM] unit) located in a community-based teaching hospital provides better care for frail elderly patients with less charges than conventional medical-surgical units. This setting and the additional functional, laboratory, and cost variables in this research study are unique to the literature on such acute inpatient units. These new data help to assess the benefit of acute GEM units in a frail senior population.

Methods

The GEM unit is an acute care inpatient unit staffed by an interdisciplinary team consisting of a physician's assistant, a social worker, and a group of nurses and nursing assistants skilled in the care of the frail elderly with oversight by a geriatrician. Nursing staffing patterns for days involved two registered nurses, one licensed practical nurse, and two nursing assistants; for nights one registered nurse, two licensed practical nurses, and two nursing assistants. The worked full-time equivalents on the unit equaled 22.8 with an average daily census slightly greater than 12 patients. A convenience sample of patients admitted to a 14-bed GEM unit was compared in a prospective study design to a similar cohort of patients admitted to a traditional medical-surgical unit at an urban, community-teaching hospital (Union Memorial Hospital) over the course of nine months. Although an attempt was made to randomize patients meeting the selection criteria to either the GEM unit or the standard medical-surgical unit, the lack of control over bed availability in a busy hospital setting precluded strict randomization, hence the "convenience sample" approximation.

Selection criteria

Eligibility for admission to either the GEM unit or the standard medical-surgical unit was determined by a nurse supervisor and the admitting house officer, who were not involved in the study, based on bed availability. The criteria for admission to the study were age older than 75 years and diagnostic criteria that met Medicare guidelines for acute care. If subjects were older than 75 years but less than 85 years of age, other criteria were necessary to enter the study. The following factors weighed heavily in favor of admission: multiple comorbid conditions, living alone or with only a functionally impaired spouse in the community, incontinence, polypharmacy (> 6 medications), albumin level < 3 g/dl, mental status change, dementia or a Mini-Mental State Examination[22] (MMSE)<25, anticipated self-care or mobility problems, depression (Geriatrics Depression Scale[23,24] [GDS] > 7), functional impairment (Frail Elderly Functional Assessment[25] [FEFA] score > 10), stage II or greater pressure sore, history of falls, recent decline in function, suspected substance abuse, and negligence. Patients were ineligible if they were fully independent or terminally ill. These selection criteria were the same as the general criteria for admission to our GEM unit, thus making each cohort similar to each other and representative of the clinical population for such a unit. Because of a desire to minimize physician variability, only two of four physician medical admitting teams were used. During the enrollment period, 61 patients 75 years old or older were evaluated. These represented between 10% and 20% of all otherwise eligible unit admissions over the study period. During that time, 34 subjects went to the GEM unit and 27 to traditional units. The study was approved by the institutional review board at Union Memorial Hospital.

Measures

All data were collected by trained interviewers none of

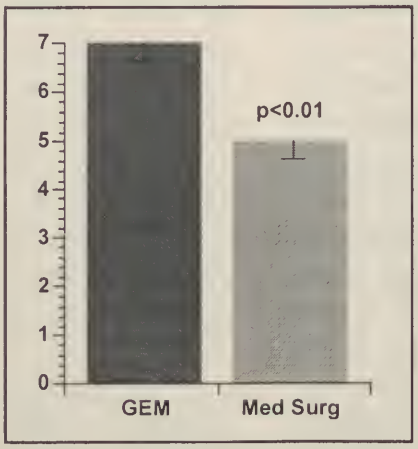


Figure 1. Number of diagnoses upon admission to the acute hospital based on chart reviewed showed more medical problems present in GEM unit admissions.

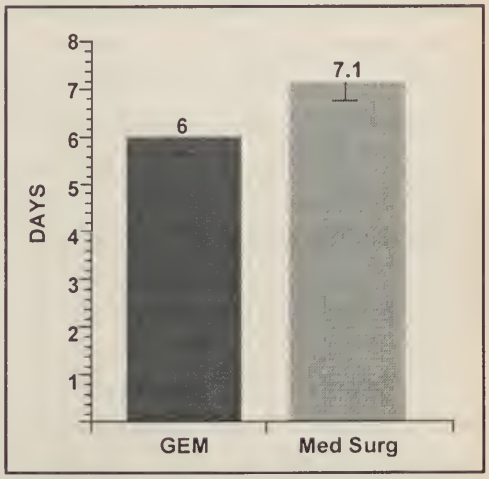


Figure 2. Admission to the GEM unit is likely to result in shorter lengths-of-stay (LOS) when compared to traditional medical/surgical wards (P=0.06).

whom participated in the clinical care of the patients. The data at admission, including the admission depression score (GDS) and admission cognitive function (MMSE), were done within 72 hours of admission, with the exception of the FEFA questionnaire, which was given to the patient between two and seven days after admission (validity of the FEFA is compromised if administered less than 48 hours after a move to a new setting). In the event of incapacity to respond, the answers for the FEFA were obtained from the caregiver or the patient's primary nurse in the hospital when no caregiver could be identified.[26]

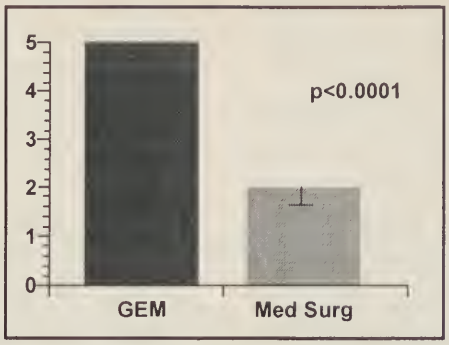


Figure 3. Patients admitted to the GEM unit were on significantly more medications on average than those admitted to a traditional medical/surgical ward.

The variables measured included age, race, sex, length of stay, number of days restrained, location before admission and location at discharge (disposition), numbers and types of medication at admission and discharge, number and types of diagnoses at admission and discharge, the type of admitting service (medical, surgical, other), admission functional level (FEFA), GDS, and MMSE. Admission serum albumin, creatinine and BUN levels were also obtained. Charges for total hospitalization, room, emergency room, operative room and recovery room, laboratory and pathology, radiology and EKG, pharmacy, medical-surgical supplies and blood transfusions were obtained on all subjects no less than one year after discharge using computerized hospital billing records. This time period was felt to be sufficient to allow for the appearance of all charges.

The GEM unit cohort received an interdisciplinary assessment of medical, social and psychological function within 72 hours by the staff. MMSE, GDS, and the FEFA were taken as the standard admission evaluation in the GEM unit. For the patients admitted to the medical/surgical wards, the instruments were administered by trained interviewers on the research team and selected, in part, because of acceptable standardization, including good inter-rater reliability.

Statistical assessment for comparisons included Student's *t* test for comparison of means and X^2 analyses for the dichotomous variables.

Results

There were no significant differences between the two cohorts with respect to race or sex . The mean age in the GEM unit was 86 years compared to 82 years old (p=0.06). The serological parameters at baseline were also similar in both cohorts.

The number of comorbid conditions upon admission in the GEM unit was 7, significantly greater than the 5 in our comparison cohort ($p < 0.01$; **Figure 1**). The lengths of stay on the traditional unit setting exceeded one day greater than on the GEM unit (7.1 $\pm$ 1.06 SE vs 6.0 days $\pm$ 0.9 SE respectively; p=0.06; **Figure 2**) despite greater comorbidity in the GEM unit.

At the time of admission, the mean number of medications (maximum number recorded=8) in the GEM unit was 5 which was significantly greater than the mean number of 2 in the comparative cohort ($p < 0.0001$; **Figure 3**). All other baseline characteristics were similar between the two cohorts.

At the time of discharge there was a significant net change in the number of medications, with the GEM unit subjects decreasing their medications by one while the other subjects went home on two more medications than at the time of admission ($p < 0.001$; **Figure 4**).

Most patients (over 80%) came from home, with less than 20% from other locations (**Figure 5**). The differences between the referral sources are illustrated in **Figure 6**. Most referrals came from medicine, followed by the general surgery service with similar proportions in each cohort.

The total cost of care was significantly less in the GEM unit compared to traditional medical-surgical care (\$6,223 $\pm$ 765 SE vs \$10,042 $\pm$ 1,308 SE; $p<0.01$; **Figure 7**). Pharmacy and medical-surgical supply charges, including blood transfusion charges, were also significantly less in the GEM unit (\$407 $\pm$ 78 SE vs \$877 $\pm$ 210S SE, $p<0.02$; and \$303 $\pm$ 75 SE vs 1,672 $\pm$ 588 SE, p=0.005 respectively, Fig. 7). Charges for room, emergency or operating rooms, laboratory/pathology, or radiology/EKG did not significantly differ (**Figure 7**). There were also no significant differences seen in disposition at discharge, restraint use, or admission FEFA, MMSE, or GDS scores. A subanalysis of subjects with MMSE scores at admission greater than 17, did not significantly change our results.

Discussion

This study indicates that an inpatient GEM unit in a community teaching hospital can have a significant positive impact on a targeted group of frail elderly inpatients. GEM

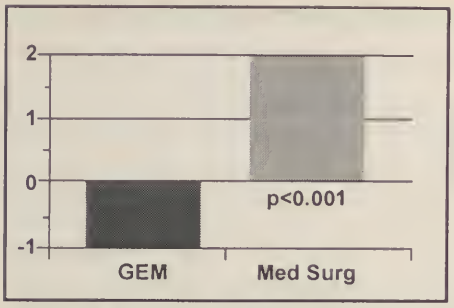


Figure 4. Hospitalization in the GEM unit was associated with a decrease in the number of medications, while the traditional medical/surgical unit patient had two additional medications placed on their pharmacologic regimen.

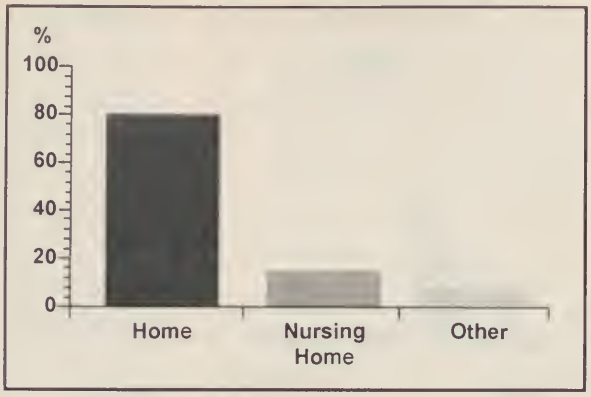


Figure 5. Most study patients were living at home before hospitalization.

unit patients were significantly sicker, based on admission diagnoses (7 diagnoses vs. 5 elsewhere). Applegate et al[15] found beneficial effects of such units in elderly hospitalized patients with moderate illness and moderate functional impairment.

Moreover, although our GEM unit patients were originally on more medications (5 vs. 2), the mean number of medications at the time of discharge was equivalent. The effect of the GEM unit on prescription drugs is relevant because of the high prevalence of negative effects of polypharmacy in frail elderly persons.[27,28] Our results confirm previous studies that showed improvement in drug regimens mainly by decreasing the number of prescribed medications despite concurrent identification of new treatable problems, some of which required additional drugs.[29,30]

We found a decreased length of stay in our GEM unit compared with the other group. Some programs showed prolonged initial length of stays, and, in others, this was reduced.[31–33] Studies showed that even if the lengths of stay were prolonged there was an overall reduction in the use of acute care hospital services.[34–37] We documented no significant difference in discharge disposition or any of the functional assessment scores (see Methods).

The effectiveness of our GEM unit may be explained by targeting a frail patient population, the use of a functional assessment team approach, and concentrating staff who are focused on specific geriatric problems (functional, psychosocial impairments and polypharmacy), often neglected in hospital wards.[38] Incidentally, after this study was completed a corporate decision was made to expand the GEM unit and to move its location. In so doing, half of the staff were displaced and an inexperienced case manager replaced the geriatrics social worker. The nursing department was unable to collect adequate data demonstrating continued benefit. Subsequently, intensive training efforts had to be undertaken for the new staff and efforts are underway to find a new geriatrics social worker to more closely approximate the original model.

Charges were evaluated and these data indicate some areas where savings are likely to be realized. Overall charges were less on the GEM unit. The savings seen in pharmacy charges strengthens the data associated with reductions in polypharmacy. The reductions in charges for medical-surgical supplies should translate into real savings regarding health care costs. Differences in personnel costs were not evaluated directly. Teasing out real-time cost measures to the study cohort are exceedingly difficult in a mixed traditional unit where the population varies tremendously by age and diagnoses. Nevertheless, the issue of cost has been addressed to some degree here and in other settings. Collard[39] found significant reductions in hospital charges for one GEM group, due to significant length of stay reductions. The Sepulveda study[40] found reduced total first year health care costs despite longer initial hospital stays on the GEM unit, secondary to overall reductions in nursing home and rehospitalization days. In another setting, there were reduced costs of medical care through successful early case finding and referral for preventive care.[41] Several other studies followed patients for 12 months and thus were able to examine the longer-term utilization and cost impacts.[36,38,42] It is provoca-

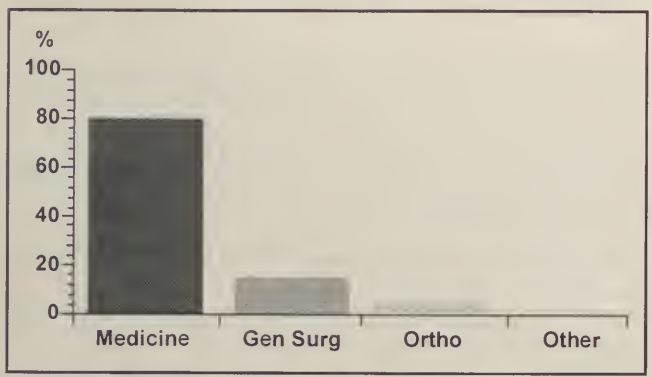


Figure 6. While patients on the GEM unit were admitted from both surgical and medical attendings, most admissions were non-surgical.

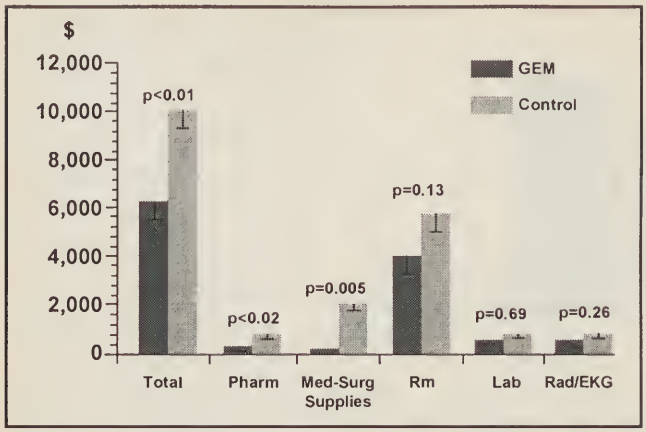


Figure 7. A significant reduction in charges was noted overall with reductions in pharmaceutical charges, charges for medical/surgical supplies, and length-of-stay. (RM = room charges)

tive in evaluating the overall cost savings to note that the average daily charges were about two-thirds of traditional care. The small additional personnel cost (1-1.5 FTEs mostly in nursing assistant care) would be more than offset by the savings from such a unit, especially considering that the areas of savings such as reductions in pharmacy and supplies impact other areas of service.

Limitations of our study include the relatively small sample size, thus increasing the probability of Type II error for some of the comparisons, and lack of a randomized study design. Larger multicenter trials may show differences in other parameters that were measured in this study but that may have lacked sufficient statistical power to demonstrate significant differences. Patients were assigned to one location or another by nurse supervisors who were not aware of nor connected with the study. The relatively close matching of the two cohorts demographically support the comparative nature of the two groups. Where cohorts did differ, the differences favored poorer outcomes in the GEM population (age, comorbidity, and polypharmacy). Physician oversight was similar in both groups with both cohorts being followed by the same internal medicine residents. Both cohorts have an attending who do rounds on patients with the resident staff at least three times per week. A geriatrician fulfills this role in the GEM unit.

Unfortunately, post-discharge data are much more difficult and costly in a non-Veterans Administration hospital since patients can easily be readmitted to other hospitals and often do not receive follow-up within the hospital system. Consequently, we were unable to obtain such additional data in this study. Before one can draw final conclusions about the effectiveness of a GEM unit, long-term follow-up studies will be necessary.

Other studies combining geriatric assessment with treatment in different settings, including inpatient consultation services [1,16,40] and outpatient consultation services[31,32,33,43] found conflicting results, and the effectiveness of these other services is still questioned. The data presented herein provide additional support to the notion that GEM units may be used to target complex frail elderly patients and obtain outcomes as good or better than healthier contemporaries in other hospital locations and do so at less cost.[9,15,17,18,42] The data on reductions in use and cost associated with medications is also encouraging given recent information about adverse drug events in hospitalized patients which incur excess lengths of stay, as well as additional costs and mortality.[44]

Our patient population tended to be older in the GEM unit cohort compared to the traditional care group, and there was a significantly greater difference in the number of comorbid conditions and medications in the GEM unit group. One might have expected that, with these findings, the lengths of stay in the unit would have been longer relative to the traditional care cohort. On the contrary, we found a trend towards decreasing lengths of stay in the GEM unit with less charges. These results justify larger controlled trials of GEM units in community hospital settings.

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Incidence rates of Lyme disease in Maryland: 1993 through 1996

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Dr. Peña was the coordinator and Dr. Strickland was the principal investigator of the Lyme Disease Project at the University of Maryland School of Medicine, Baltimore.

ABSTRACT: *The incidence rate per 100,000 population by gender and age group was calculated for the 24 Maryland jurisdictions using 1,392 cases reported to the Lyme Disease Registry during 1993 to 1996. The overall incidence rate for the state was 7.0 cases per 100,000 inhabitants. Males (incidence rate = 7.7) were 1.2 times more affected than females (incidence rate = 6.2) ($p<0.001$). The bimodal overall age distribution shows a peak in the 10 to 19 age category (incidence rate = 8.5) and in the 50 to 59 age group (incidence rate = 8.9), and in the 20 to 29 age group (incidence rate = 3.9). The incidence rate by jurisdiction ranged from 0.7 in Allegany County from Western Maryland to 88.3 in Kent County on the Upper Eastern Shore. Results from this study show that counties from the Upper Eastern Shore region had the highest specific incidence rate by age group/gender/jurisdiction while counties from Western Maryland had the lowest specific incidence rates and have not reported Lyme disease patients younger than 10 or older than 59 years of age. This difference might be explained primarily by the kind of outdoor activities in which the different age groups are involved and the relative abundance of* Ixodes scapularis *infected with the etiologic agent of Lyme disease,* Borrelia burgdorferi, *in these two regions.*

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The etiologic agent of Lyme disease (LD), the spirochete *Borrelia burgdorferi*, is inoculated into the dermis during the feeding of a Borrelia-infected *Ixodes scapularis* or deer tick. Three to 30 days after the inoculation, a localized infection, an expanding rash or erythema migrans (EM), may be noticed at the site of the tick bite. General symptoms including fever, fatigue, headache, and myalgia may accompany the EM. If the infection persists, the spirochetes disseminate to the rheumatologic, nervous, and cardiac systems causing late clinical manifestations of the disease.

Since the first LD case was reported in Maryland in 1979, the number of cases reported to the Department of Health and Mental Hygiene steadily increased until 1991. In 1992, the number of cases declined when a more restricted LD surveillance case definition was introduced by the Centers for Disease Control and Prevention (CDC).[1] Between 1992 and 1996 the incidence rate of LD, as defined by the CDC surveillance case definition, rose from 3.9 to 8.3 per 100,000 population.

This increase, which follows a national trend, can be explained by both improved surveillance and actual growth in the number of cases per year. The surveillance system was improved in an effort to reduce the large number of underreported LD cases estimated by a physician survey conducted in 1993.[2]

This report presents the distribution of LD incidence rates by jurisdiction, age group, and gender to provide a better understanding of the epidemiology of LD in Maryland. It will serve as the basis for comparison with future rates as well as rates from other states.

Methods

From 1993 to 1996, the Lyme Disease Registry (LDR) carried out a statewide surveillance for LD in the 24 Maryland jurisdictions (23 counties and Baltimore City). Detailed surveillance procedures for LD in Maryland were previously published.[3] The LDR received a total of 3,646 suspected cases of LD from which 2,619 (71.8%) were confirmed as LD cases by the reporting physicians (LDR records). Only LD cases meeting the CDC case definition, with a known date of onset between 1993 and 1996, were included in the calculation of each incidence rate (IR) per 100,000 population.

The average number of cases for the four-year period per jurisdiction and/or age group, and/or gender was considered as the numerator of the IR. The denominator of the IR for the specific jurisdiction, age group and gender was the population on January 1, 1995, the midpoint for the four-year period interpolated from the 1990 census (Maryland Office of Planning, Planning Data Services). For gender comparison, the relative risk for the male to female ratio was calculated using the actual number of LD cases and the specific population by gender and age group. The male to female ratio and age group distribution were calculated to compare results from this study with other studies.

Epi-Info 6.0 was used for data analysis. Rate calculations and graphics were made using Lotus 1-2-3, Release 5.

Results

A total of 1,392 (53.2%) of the 2,619 LD cases reported to the LDR met the CDC case definition and had a date of onset between 1993 and 1996, and were thus used for analysis. The proportion of cases meeting the CDC case definition from all LD cases reported to the LDR increased from 51.3% in 1993 to 64.0% in 1996.

Demographics and onset of symptoms

The age distribution for cases in this study group (mean=35, median=36 years) was similar to those cases not meeting the CDC criteria (mean=36, median=35 years) ($p=0.64$). A higher proportion of males (63.4%) than females (54.5%) met the CDC case definition. There were 454 (32.6%) patients under age 20, and 116 (8.3%) patients between 20 and 29 years of age. The proportion of males (54.0%) was higher than females (46.0%). Males (mean=33, median=33 years) were younger than females (mean=38, median=39 years) ($p< 0.001$).

The peak month of symptom onset was June (29.1%) and January (1.4%) was the lowest. One half (49.7%) of the patients were residents in the Baltimore Metropolitan Area (Baltimore City, Baltimore, Anne Arundel, Carroll, Harford and Howard counties), while only 22 patients (1.6%) were from Western Maryland (WM) (Allegany, Frederick, Garrett and Washington counties).

Incidence rates by jurisdiction, gender, and age group

Jurisdiction. The IR for Maryland was 7.0 cases per

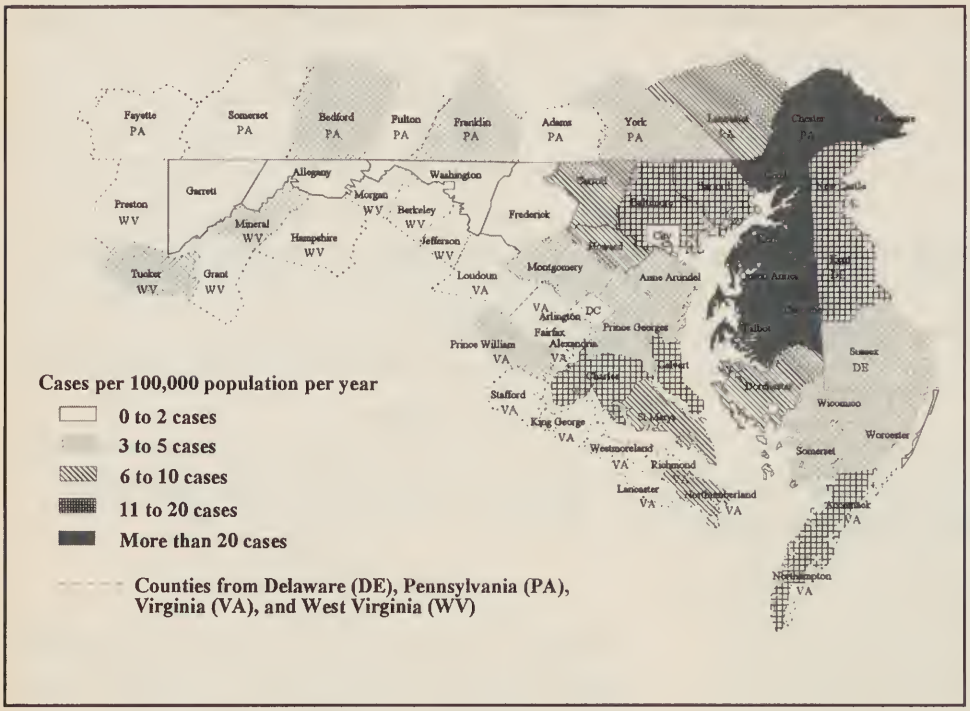


Figure 1.

100,000 inhabitants for the 1993 to 1996 period. The IR by jurisdiction ranged from 0.7 in Allegany County in WM to 88.3 in Kent County on the Upper Eastern Shore (UES) (**Figure 1**). When calculating the IR by jurisdiction, the five highest rates were from the UES counties (Kent=88.3, Queen Anne's=61.7, Cecil=35.4, Talbot=28.1, Caroline=27.0). Conversely, the five lowest rates were from the WM counties and Baltimore City (Allegany=0.7, Frederick=1.3, Baltimore City=1.6, Garrett=1.7, Washington=1.8). The endemicity of LD in the UES is emphasized by the fact that the lowest IR in this region (Caroline County, IR=27.0) was twice the highest IR in the other regions (Harford County, IR=14.4).

Gender. Overall, males (IR=7.7) were 1.2 times more affected than females (IR=6.2) in the state. In 17 of the 24 Maryland jurisdictions, males were more affected by LD than females (**Table 1**). The lowest IRs for females and males (Talbot, IR=20.8 for females, and Caroline, IR=23.3 for males) on the UES were higher than the highest IR from the rest of the state (Harford, IR=14.8 for females, and Baltimore County, IR=14.3 for males).

Age group. The bimodal overall age distribution shows a peak in the 10 to 19 age category (IR=8.5) and the highest peak (IR=8.9) in the 50 to 59 age group, and the lowest rate in the 20 to 29 age group (IR=3.9) (Figure 2). Children from Kent County under 10 years of age had the highest IR (170.1), followed by the 40 to 49 age group from Queen Anne's County (IR=127.1). Kent County had the highest IR in all other age categories with the exception of the 10 to 19 age group. With few exceptions, the five counties from the UES region shared the five highest IRs in age categories.

Gender by age group. When stratified by gender, the age group distribution kept its bimodal pattern: the first peak for females was in an earlier age group (0 to 9 group, IR=7.0) than males (10 to 19 group, IR=10.8) and the second peak for females was in an older age category (60 to 69, IR=8.3) than males (50 to 59, IR=10.2) (Table 1, Figure 2). The lowest overall IR for the state was in the 20 to 29 age group, which was also the lowest point for males (IR=4.4) and females (IR=3.3).

Gender by age group by jurisdiction. Males had a greater IR than females in 86 of the 192 specific IRs by gender/age group by jurisdiction, but only five of them were statistically significant (Table 1). The highest IR was more than twice the value of the second highest in males under 10 years of age (Kent=208.5, Queen Anne's=75.6) and in males in the 40 to 49 age group (Kent=123.6, Queen Anne's=53.7).

Discussion

Jurisdiction. By the time LD became a reportable disease in Maryland in 1989, all counties from the UES region had reported their first cases of LD. Since 1989, the Maryland jurisdictions with the highest IRs have been from the UES region. The jurisdictions showing the lowest annual IRs have been from the WM region. It was not until 1990 and 1993, respectively, that Allegany and Garrett counties from the WM region reported a LD case for the first time (LDR records).

The distribution pattern of IR by jurisdiction has not changed since the first case was reported in Maryland

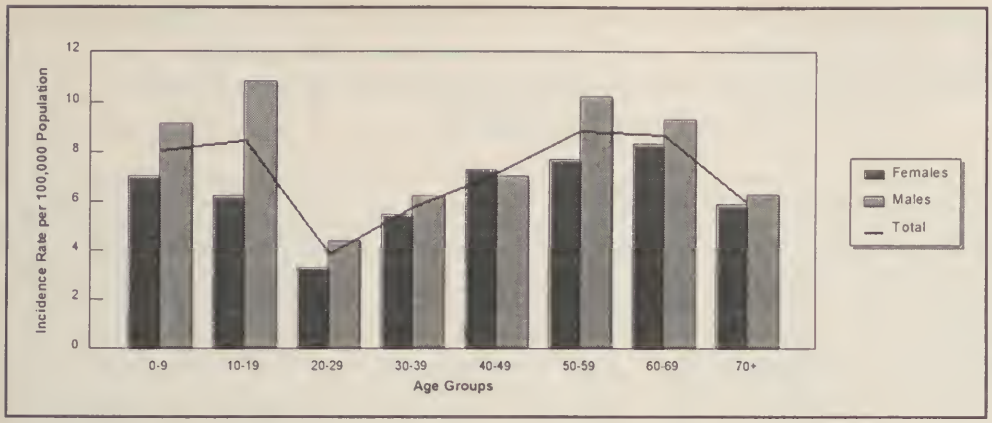


Figure 2. Lyme disease in Maryland: 1993-1996
Incidence rates by gender and age groups

almost 20 years ago. The differential findings in the IRs among the Maryland regions are supported by a statewide survey of ticks from white-tailed deer carried out in Maryland in 1989. In that study, the investigators found the percentage of *Ixodes scapularis* infected with *Borrelia burgdorferi* ranged from 0% in the Appalachian region (includes WM counties) to 15.0% in the Eastern Coastal Plains (UES and Lower Eastern Shore regions together).[4,5]

An IR of less than two cases per 100,000 population was shared by most of the counties from West Virginia, Pennsylvania, and Virginia that surround the counties of WM during 1993 to 1996. There were a few exceptions: Mineral and Tucker counties in West Virginia, and Adams, Bedford, and Franklin counties in Southern Central Pennsylvania had higher incidence rates (ranged from 2.1 to 4.1). On the other hand, Chester County in South East Pennsylvania, and New Castle and Kent counties in Delaware are high endemic areas with incidence rates comparable to their counterpart counties in the Maryland UES (L. Haddy, West Virginia Health Department; J. Rankin, Pennsylvania Department of Health; L. Branch, Virginia Health Department; D. Wolfe, Delaware Division of Public Health, 1998, personal communications).

Gender. The overall IR for the state by gender in this study shows males having higher rates of LD than females. Fifty-four percent of cases were males, which was very similar to the nationwide distribution (51% to 53%) reported for the same period of 1993 to 1996.[6-9] Since 1989, the male to female ratios for LD cases in Maryland have shown a predominance of male cases, from 1.1 in 1990 to 1.5 in 1992.[10-12] The same gender distribution has been observed in the surrounding states of Pennsylvania (male to female=1.2) and Delaware (male to female=1.5).[13,14]

Outdoor activities (e.g., hunting), type of clothing, use of tick repellents, etc. may play an important role in the gender difference. In addition to differences in morbidity due to biological factors (e.g., pregnancy, delivery, problems related with reproductive organs, and greater life expectancy of women), there is a particular illness behavior for each gender.[15] One researcher noted that "women's perception of symptoms, assessment of symptoms' importance, and their readiness to take actions concerning them," increases women's willingness to seek medical care.[16] These investigations support the following assumption to explain the lower incidence rate in females: If both genders have the same chance of contracting LD under the same circumstances, seeking medical attention after a tick bite or the first signs of the disease makes a difference in the incidence rate. Women may seek health care as soon as they have a tick bite or a small rash, receiving immediate treatment, therefore precluding the systemic manifestation of LD or the expansion of the EM to a reportable size. Antibody testing at an early stage increases the chance of a negative result, making it almost impossible to detect the case through passive LD surveillance unless the attending physician voluntarily reports the case.

Age group. The distribution of these IRs by age group showed the same bimodal pattern reported by other studies: one peak at an early age (0 to 20 age group), then a decline in the young adult age (20 to 29 age group), and a second peak in older ages (50 years and over).[13,17,18] The frequency distribution of age groups in the CDC reports also showed the same bimodal pattern, 23% to 24% of LD cases were within the age group of 0 to 14 years and 24% to 28% of LD cases were between the ages of 30 and 49 years.[6-9] The bimodal distribution from the Maryland LDR cases shows 27% and 31% of cases, respectively, distributed in the same age groups for the two IR peaks.

The bimodal age distribution of the LD cases may be explained by the type of activities in which both age groups are involved. The most difficult part is to under-

Table 1. Incidence rates of Lyme disease per 100,000 population in Maryland for 1993 to 1996. Only cases meeting the CDC surveillance case definition and onset of symptoms during the same period. Distribution by jurisdiction, gender and age group.

AGE GROUP / GENDER	0-9		10-19		20-29		30-39		40-49		50-59		60-69		70+		Total	
JURISDICTION	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Allegany	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.6	0.7
Anne Arundel	9.3	6.6	1.8	10.7‡	0.8	2.6	1.9	3.7	4.7	4.7	4.3	2.1	4.5	4.9	4.4	7.0	3.9	5.1
Baltimore City	0.0	0.0	2.8	3.4	1.3	2.4	1.5	2.6	1.5	0.6	4.6	2.8	0.0	1.1	1.2	1.1	1.5	1.8
Baltimore County	11.0	16.2	5.2	20.9§	5.9	10.3	6.7	12.0†	9.0	11.1	8.2	21.7‡	17.9	15.2	8.4	9.1	8.7	14.3§
Calvert	10.1	9.7	11.4	16.3	18.0	0.0	17.1	4.6	14.9	28.7	9.0	0.0	25.3	13.1	0.0	17.9	13.6	11.3
Caroline	11.2	33.9	26.9	24.1	27.2	29.1	52.1	11.2	25.1	24.9	36.1	17.1	38.4	0.0	28.5	44.5	30.5	23.3
Carroll	9.8	16.2	13.9	15.6	5.7	8.5	4.0	6.3	13.4	4.4	7.5	14.3	10.5	5.8	8.2	14.0	9.0	10.4
Cecil	59.2	48.3	33.2	52.7	23.3	9.3	37.4	31.3	43.5	25.1	42.0	25.9	42.9	27.2	24.9	32.9	38.3	32.4
Charles	16.6	11.0	24.8	5.9	11.9	11.9	2.5	2.5	5.9	5.9	24.7	18.3	25.2	18.3	25.1	0.0	14.5	8.8
Dorchester	0.0	35.3	0.0	0.0	0.0	0.0	0.0	11.2	0.0	12.4	29.9	0.0	29.0	17.0	0.0	17.2	6.2	12.2
Frederick	0.0	0.0	0.0	0.0	1.9	5.9	1.6	1.6	1.8	0.0	3.4	3.1	0.0	0.0	0.0	0.0	1.2	1.5
Garrett	0.0	0.0	0.0	0.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	1.7	1.7
Harford	15.5	16.0	17.6	12.6	5.3	8.6	13.3	14.8	16.0	11.1	12.7	22.4	21.1	23.3	25.5	0.0	14.8	13.9
Howard	3.0	14.2	7.9	22.5	3.2	1.6	3.5	9.4	13.0	8.2	7.1	13.4	0.0	13.8	0.0	7.3	5.6	11.1‡
Kent	130.2	208.5	40.7	104.3	62.8	41.8	55.3	95.6	130.2	123.6	74.5	74.9	45.0	51.9	79.2	78.5	77.7	99.6
Montgomery	3.8	5.3	5.7	5.3	0.9	2.8	3.8	3.3	3.6	4.3	4.8	2.5	3.4	2.0	1.4	2.2	3.4	3.7
Prince George's	1.3	4.6	1.6	4.0	0.4	0.0	2.7	2.2	2.8	3.2	3.8	4.9	6.3	13.8	3.4	3.6	2.3	3.6†
Queen Anne's	93.6	75.6	43.3	106.6	37.1	36.3	56.0	50.1	80.4	53.7	100.3	61.2	0.0	29.6	81.1	56.7	63.3	60.1
Saint Mary's	3.8	0.0	4.3	12.9	0.0	10.7	7.0	3.3	4.7	13.3	15.0	27.9	0.0	0.0	0.0	0.0	4.4	8.6
Somerset	0.0	19.5	0.0	0.0	0.0	0.0	33.5	9.9	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	3.8
Talbot	37.9	23.9	0.0	57.5	0.0	13.3	20.4	22.1	34.5	36.2	14.0	80.2	23.8	40.4	28.3	28.6	20.8	36.1
Washington	0.0	0.0	3.4	0.0	0.0	0.0	2.6	0.0	5.9	5.5	0.0	12.2	0.0	0.0	0.0	0.0	1.6	1.9
Wicomico	4.6	0.0	9.1	4.5	3.9	4.1	7.7	11.9	0.0	9.8	0.0	7.5	6.8	16.6	0.0	0.0	4.3	6.6
Worcester	0.0	10.0	0.0	0.0	0.0	10.7	8.0	0.0	9.6	9.6	0.0	0.0	0.0	10.2	0.0	0.0	2.5	5.3
State of Maryland	7.0	9.1†	6.2	10.8§	3.3	4.4	5.5	6.2	7.3	7.0	7.7	10.2	8.3	9.3	5.9	6.3	6.2	7.7§

Note for shaded cells (comparison of incidence rates between genders)= †: p value £0.05; ‡: p value <0.01; §: p value <0.001

stand why the 20 to 29 year age group had the lowest incidence rate. It can be hypothesized that in this age group there may be two factors influencing the low incidence rate: 1. According to the data from the National Health Interview Survey,[19] more than 75% of people in this age group consider themselves as having excellent or very good health (this self-health assessment has a linear trend from the highest score in the youngest to the lowest in the oldest age group) which may cause them to be unaware of the initial symptoms of Lyme disease, or to delay seeking medical care until dealing with complications of LD. 2. Less than 77% of people in this age group are employed, and approximately 70% have health insurance (according to the Health Insurance Coverage: 1995, U.S. Census Bureau, more than 86% of children under 18 years have insurance coverage while the 18 to 24 and 25 to 34 year age groups have the lowest rates: 71.8% and 77.1% respectively). Employed, uninsured people use fewer health services than the insured even when they encounter serious health problems.[20] The poor access to employment-based insurance coverage is compounded by relatively low incomes, single marital status (close to 60%), and the fact that many in this group have not yet finished college (financially may not be able to afford insurance during the summer vacation months).[21] Therefore, seeking medical care for health problems may be significantly delayed in this population until the problem becomes more complicated. Early LD symptoms such as

EM, acute arthritis, Bell's palsy, and recalling a tick bite had the lowest specific rate in the 20 to 29 age group (LDR records). This low rate supports the assumption that several LD cases go unnoticed during the first stage of the disease in young adults. In several circumstances of delayed medical attention, patients are difficult to diagnose and symptoms may not be attributed to LD and therefore not reported as such.

Gender by age group. The IR distribution by gender in this study had the same bimodal pattern reported in Maryland cases from 1990 where the second peak for females was also in an older age group (60 to 69) than males (50 to 59).[10] There is no nationwide information on rates for LD by gender and age group.

Gender by age group by jurisdiction. The highest specific IRs by gender and age group increase the evidence that the population in certain endemic areas, such as the five counties from the UES in Maryland, are at higher risk. While the counties from the UES region had the highest specific IRs by gender/age group by jurisdiction, counties from WM had the lowest specific IR, and have not reported LD patients younger than 10 or older than 59 years of age. This difference might be explained primarily by the kind of outdoor activities in which the different age groups are involved and the relative abundance of *Ixodes scapularis* infected with the etiologic agent of LD, *Borrelia burgdorferi,* in these two regions.

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CASE RECORDS

of the University of Maryland School of Medicine and Baltimore VA Medical Center

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A 70-year-old man with atrial fibrillation and stroke

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PRESENTATION OF CASE

A 70-year-old man was admitted to an outside hospital with rapid atrial fibrillation. Two months before admission, atrial fibrillation was diagnosed and propanolol was prescribed, with which he was non-compliant. During the four weeks before admission, he noted shortness of breath, progressing to dyspnea at rest. This was not associated with coughing, wheezing, hemoptysis, chest pain, palpitations, edema, or paroxysmal nocturnal dyspnea. On three occasions, he awoke during the night with cold sweats. Upper endoscopy was performed three weeks before admission for evaluation of dyspepsia, at which time an esophageal stricture was diagnosed, biopsied, and subsequently dilated. Histopathologic examination of the specimen revealed no evidence of malignancy. There was no history of hypertension, diabetes mellitus, stroke, myocardial infarction, rheumatic fever, or cardiac murmur. The patient was taking omeprazole 20 mg daily and had no drug allergies. The patient did not use tobacco, drank alcohol often, and was a retired clerical worker.

Blood pressure was 146/86 mm Hg, pulse was 148, and the respiratory rate was 24. The carotid upstroke was of normal contour and no bruits were present. The breath sounds were normal and there were no wheezes, rales, or rhonchi. The cardiac rhythm was irregularly irregular, and the first heart sound was variable in intensity. The second heart sound was normal, and a I-II/VI holosystolic murmur was heard at the left sternal border, radiating to the axilla. The bowel sounds were normal and there was no tenderness or organomegaly. No peripheral edema, cyanosis, or clubbing was present.

The electrocardiogram was notable for rapid atrial fibrillation without acute ischemic changes or evidence of prior infarction. The chest radiograph demonstrated mild cardiomegaly with clear lung fields. Laboratory values were remarkable for a hematocrit of 30% with an MCV of 79, a white blood cell count of 6,400, and normal serum electrolytes. The total protein was 7.2, and the albumin was 2.9. Intravenous diltiazem and procainamide were administered, and serial measurements of creatine kinase excluded a myocardial infarction. On the evening of admission, the patient had a focal seizure involving the right arm. A magnetic resonance scan of the head showed multiple old cortical infarcts

Table 1. Salient features

- Atrial fibrillation
- Embolic stroke
- Diastolic murmur
- Constitutional symptoms

and new infarcts involving both parietal lobes. Intravenous heparin and phenytoin were administered and the patient was transferred for further evaluation.

On arrival the patient's temperature was 100.7° F. The cardiac exam was remarkable for a II/VI holosystolic murmur along the left lower sternal border and an intermittent diastolic rumbling murmur heard at the apex only with the patient in the left lateral decubitus position. He had mild dysarthria, a right pronator drift, and mildly diminished strength in the right arm. The electrocardiogram showed normal sinus rhythm with a first degree atrioventricular block and nondiagnostic ST-T changes. A diagnostic procedure was performed.

Discussion of Case

The analysis of a case is often facilitated by the delineation of the most salient features which can serve as a springboard for discussion as well as a basis for a comprehensive differential diagnosis. These features should be sufficiently general to encompass a fairly wide variety of different disorders but specific enough to be of assistance in ascertaining the correct diagnosis. The key features selected for the present discussion are listed in **Table 1**.

The clinical course in this case was relatively brief and was dominated by cardiovascular symptoms. After complaining of progressive dyspnea for several weeks, the patient presented to a hospital in atrial fibrillation with a rapid ventricular response. Atrial fibrillation is a common arrhythmia, which becomes more prevalent with increasing age[1] and is associated with a myriad of etiologies. The rapid ventricular rate was a major determinant of symptoms, and provides convincing evidence of a healthy atrioventricular conduction system, but is otherwise of little help in elucidating the pathogenesis of the atrial fibrillation. Similarly, the fact that the arrhythmia was transient and reverted to normal sinus rhythm is relatively nonspecific. Atrial fibrillation can occur with diverse clinical syndromes and a wide variety of disorders, some of which involve the cardiovascular system only peripherally. Some, such as illicit drug use, can be excluded by the history, while others, such as the Wolff-Parkinson-White Syndrome, can be eliminated by the absence of key laboratory findings (e.g., a short PR interval and delta wave on the electrocardiogram). However, the remaining list of possible diagnoses is a long one.

The occurrence of a focal seizure involving the right arm was a dramatic event, which focussed attention on the central nervous system. A magnetic resonance imaging (MRI) study was obtained and revealed the presence of multiple old cortical infarcts with new infarcts in both parietal lobes, strongly suggesting cerebral embolization. There are fewer causes of embolic stroke of cardiac origin than of atrial fibrillation and this offers substantial help in narrowing the diagnostic possibilities (**Table 2**). Of these, we can probably exclude "lone" or idiopathic atrial fibrillation as the murmurs detected suggest the presence of organic heart disease. Recurrent emboli from a severely atherosclerotic aorta is a possibility, even in the absence of an inciting factor such as catheter-induced trauma. However, it is difficult to explain the entire clinical picture (especially the appearance of an apical diastolic rumbling murmur) solely on the basis of recurrent emboli from the aorta. A prior "silent" myocardial infarction cannot be excluded as a cause of atrial fibrillation and source of systemic emboli, but there are signs of a systemic illness that would be hard to explain on the basis of ischemic heart disease alone. In addition, neither the electrocardiogram nor the serial

Table 2. Cardiovascular sources of emboli

- Atrial fibrillation/flutter
- Myocardial infarction
- Deep vein thrombosis with paradoxical emboli
- Atheromatous aorta
- Infective endocarditis
- Cardiac tumors

CK measurements suggest a recent acute myocardial infarction. The possibility of occult deep venous thrombosis with recurrent pulmonary emboli (causing atrial fibrillation) and paradoxical embolization through a patent foramen ovale is intriguing. It is estimated that up to 27% of people have a patent foramen ovale[2] and paradoxical emboli may occur more frequently than generally recognized.[3] However, the absence of any signs of pulmonary hypertension on the physical examination, chest roentgenogram, or the electrocardiogram make this combination of diagnoses considerably less likely. Thus, from the list of cardiovascular sources of emboli, we are left with endocarditis and cardiac tumors, both of which remain a distinct possibility.

The common causes of a diastolic murmur, which was heard by one observer in this case, are few in number. Aortic regurgitation and pulmonic regurgitation can be excluded on the basis of the physical examination, since the diastolic rumble auscultated at the apex in the left lateral decubitus position in our patient is distinctly different from the blowing decrescendo basilar murmurs which characterize semilunar valve insufficiency. An atrial septal defect with a large left-to-right shunt can produce a mid-diastolic rumble due to increased blood flow across the mitral valve but the absence of shunt vascularity on the chest roentgenogram and the lack of electrocardiographic evidence of right ventricular hypertrophy make this unlikely. Mitral stenosis (and less commonly tricuspid stenosis) characteristically causes a diastolic rumble, but the typical associated auscultatory findings (opening snap, loud first heart sound, loud pulmonic component of the second heart sound, presystolic accentuation of the murmur during normal sinus rhythm) were not heard. In addition, mitral stenosis alone would not explain the laboratory findings suggestive of a chronic inflammatory state (elevated serum globulins, anemia, night sweats and fever) unless there was concomitant bacterial endocarditis, a distinctly unusual complication of mitral stenosis in the absence of significant mitral regurgitation. Atrial myxomas may be associated with a diastolic rumble, similar to that heard in mitral stenosis, if the tumor obstructs the mitral valve orifice during diastole. A characteristic "tumor plop," absent in the description of this case, may occasionally be heard as the tumor prolapses across the atrio-ventricular valve.

The same two possibilities are left: subacute bacterial endocarditis and cardiac tumor. Both may be accompanied by signs of chronic illness, hypermetabolism, changing murmurs, and embolic phenomenon, and both are notoriously difficult to diagnose clinically. Although bacterial endocarditis is usually accompanied by persistent fever, this may be low-grade, insidious, or even absent when the infecting organism is of low virulence. Infective endocarditis has assumed increased importance recently and now accounts for more discharge diagnoses than does pneumonia, AIDS, or acute pancreatitis.[4] In the past, most patients who developed infective endocarditis had pre-existing rheumatic valvular disease. In contrast, the most common underlying cardiac abnormality currently is mitral valve prolapse,[5] which may be subtle and more difficult to diagnose solely from physical examination (our patient did have a systolic murmur suggestive of mitral regurgitation although we are not told whether this preceded his present illness). Interestingly, although mitral valve prolapse is more common in women, a review of cases of infective endocarditis complicating mitral valve prolapse showed that almost 70% of cases in patients aged 50 years or older occurred in men.[6] In patients at risk, endocarditis may be precipitated by dental work or other procedures which provoke bacteremia if prophylactic antibiotics are not administered. Our patient underwent dilatation of an esophageal stricture three weeks before admission, a procedure for which antibiotic prophylaxis is recommended for individuals at risk.[7] However, it is difficult to implicate this as a causative procedure in our patient since the

onset of symptoms and development of atrial fibrillation preceded esophageal dilatation by several weeks. Although infective endocarditis cannot be excluded, this diagnosis does not explain the apical diastolic rumble. In addition, it would be distinctly unusual to have a normal white blood cell count in the face of active endocarditis in an individual who is not immunocompromised. Accordingly, endocarditis is not the most likely explanation in this case.

Primary cardiac tumors are rare, with a reported incidence of less than 0.2% in unselected autopsy cases.[8] Most of these are benign and more than 75% of benign cardiac tumors are myxomas. Approximately 80% of these arise from the left atrium, usually from a stalk with a narrow pedicle, from which they may project into the orifice of the mitral valve. The clinical manifestations of myxomas depend largely on their location, size, and mobility. Most commonly, the symptom complex consists of one or more of the triad of valvular obstruction, emboli and constitutional symptoms, such as fever, night sweats, or weight loss.[9] Systemic embolization occurs in up to 50% of cases, with about half of the emboli involving the central nervous system. Laboratory findings often suggest the presence of a chronic debilitating illness with anemia, an elevated sedimentation rate and an increase in serum globulins. The mechanism of the constitutional manifestations has been debated, but recent work suggests that the tumors produce interleukin-6, a cytokine involved in the production of the inflammatory response.[10,11] It is readily apparent that the clinical presentation of our patient is quite consistent with that of a left atrial myxoma. Another tip-off is the description of an intermittent diastolic rumbling murmur heard in the left lateral decubitus position. The murmur associated with a left atrial myxomas is notoriously position-dependent, because of the mobility of the tumor, with partial or even complete obstruction of the mitral valve when the patient assumes certain positions.

In summary, the most likely diagnosis in this case is a left atrial myxoma, which could be demonstrated by an echocardiogram. The next most likely possibility is infective endocarditis, which could be confirmed by blood cultures and an echocardiogram.

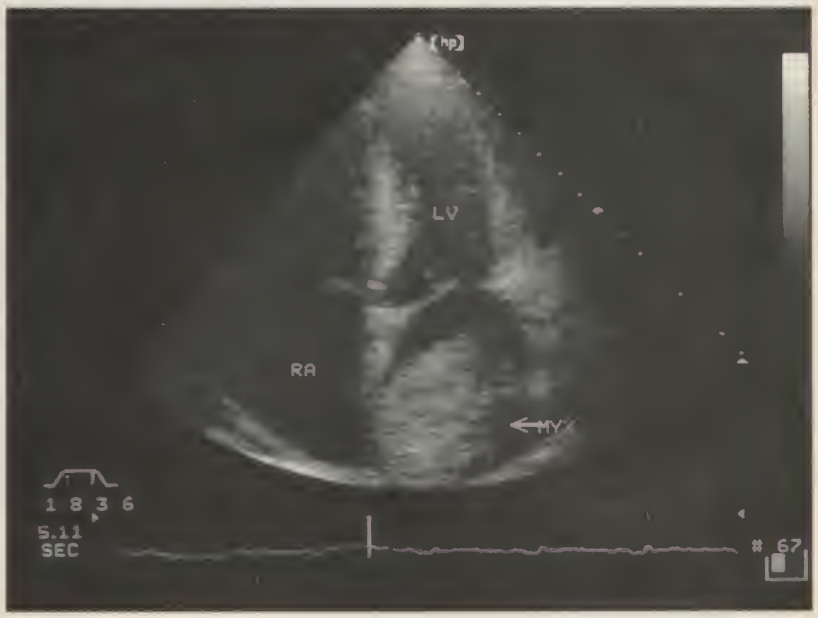


Figure 1. Apical four-chamber view from a transthoracic echocardiogram demonstrating myxoma (myx) within the left atrium. LV = left ventricle, RA = right atrium.

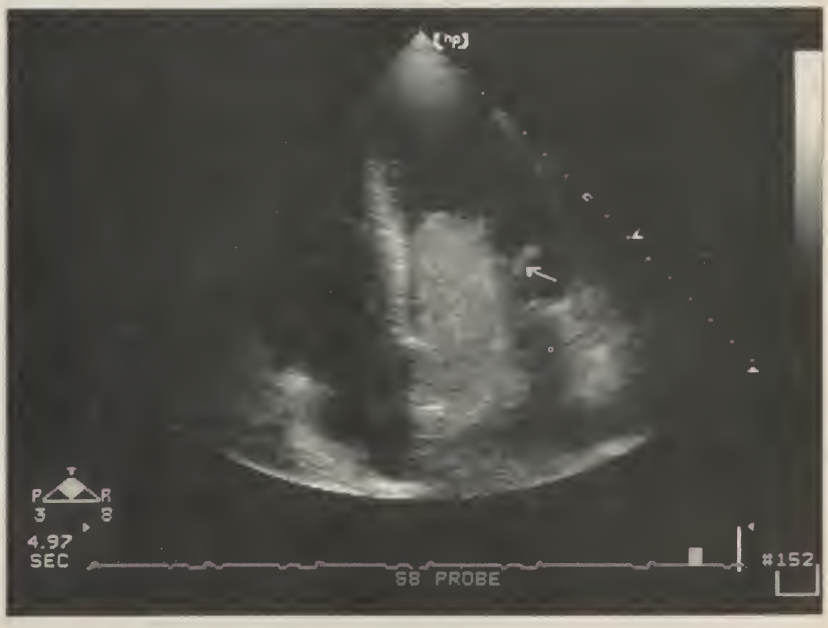


Figure 2. Apical 4-chamber view demonstrating prolapse of the myxoma across the mitral valve, and fibrinous projections (arrow) which covered the surface of the tumor.

CASE RECORDS

Diagnosis

A trans-thoracic echocardiogram was performed, which demonstrated a large mobile mass within the left atrium, attached to the inter-atrial septum, consistent with an atrial myxoma (**Figure 1**). The mass prolapsed across the mitral valve during diastole, and was associated with multiple superficial fibrinous projections (**Figure 2**). The patient subsequently underwent operative resection of a 7 x 4 x 2 cm reddish-brown colored mass (Figure 2) which was attached to the interatrial septum via a fibrous stalk. Pathologic examination demonstrated a loose, sparsely cellular stroma with stellate, or polyhedral cells typical of atrial myxoma (**Figure 3**). Special stains demonstrated plump endothelial cells surrounding vessels of capillary size, also typical of myxoma. The patient made an uneventful recovery from surgery, and has had no further embolic phenomenon.



Figure 3. Cardiac myxoma immediately after excision. The forceps seen on the right hold atrial tissue and the stalk of the myxoma

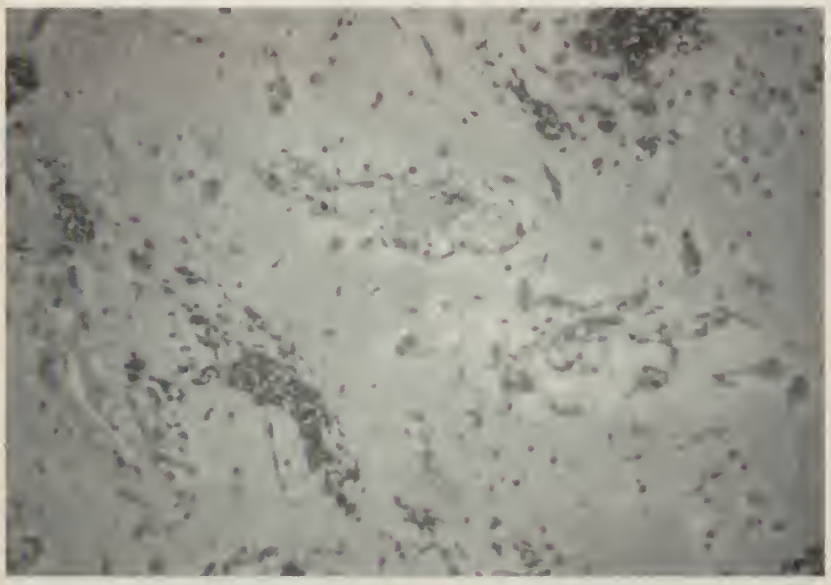


Figure 4. Photomicrograph of the tumor showing loose cellular stroma and interspersed stellate cells typical of myxoma.

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Emergency open heart surgery under World War II combat conditions

The remarkable experience of Douglas H. Stone, M.D.: a young Baltimore surgeon

This is my account of the battlefield heart operation performed on Private Terrance "Terry" Kelly Fitzgerald in 1944 during the Normandy Campaign, World War II. A reunion in 1995 revealed a keen interest by the patient and his wife, Vivian, in learning more of what had actually happened to him in Normandy on that pivotal day of his life. Also, for many years members of my family have urged me to record one of my most interesting war experiences.



Figure 1. Private Terrance K. Fitzgerald (Terry) before his injury in June 1944.

After Pearl Harbor, academic centers and the medical profession organized to serve our country's armed forces. I joined the Johns Hopkins General Hospital #18. This unit was activated at Fort Jackson, South Carolina, April 20, 1942. I was commissioned as a captain, having completed my general surgical residency the year before at The Union Memorial Hospital in Baltimore.

The Hopkins Hospital Unit was dispatched to the South Pacific and stationed in New Zealand for six weeks. After indoctrination, we went to Fiji. I served there with the Hopkins Unit for another nine months, during which time we cared for 50 wounded marines from Guadalcanal. In Fiji, I ruptured a ligament in my left shoulder helping to build huts for personnel and was ordered back to Walter Reed Hospital, where it was repaired.

The Auxiliary Surgical Groups

Reprints: *Douglas H. Stone, M.D. (ret.), 24 Arbor Lane, Asheville, NC 28805-8705*

While convalescing, I met with Surgeon General Fred Rankin who discussed new assignments that were available. He told me about the newly established Auxiliary Surgical Group Units, which

had proven successful in the North African Campaign. These were made up of 40 teams, each composed of three physicians — a chief surgeon, his assistant, and an anaesthetist – and a nurse and two GI technicians. He gave me a choice, and I was assigned to the 4th Auxiliary Surgical Group as chief of a team. Each chief was allowed to choose his own assistants from the cadre of other medical officers based on mutual consent.

These special teams could function in field hospitals, in evacuation hospitals, and even with the most forward battlefield clearing stations. When the strategic situation demanded, the team might even have to act independently to provide initial care to the severely wounded. The teams were utilized on a random basis, and being unattached, were sent wherever they were needed most urgently. Nurses, all young women in those days, were usually detached to serve with the evacuation units when their teams were in combat areas. Nevertheless, some were killed in bombing raids. Several of our officers and enlisted men were also killed in action, two of them close friends of mine.

Field hospitals were divided into three platoons, each with a surgical team and about 20 army technicians, tents, operating tables, and all the additional mobile equipment needed to perform forward battlefield surgery. They were the first definitive units in the field and usually backed up the clearing stations, which were designed to administer first aid and triage on the edge of the battlefield. This enabled serious casualties to reach us promptly in the field hospital. Our primary mission was to provide life-saving surgery to nontransportable chest and abdominal patients who could not survive without immediate attention. The less seriously wounded were transported back to the next in line which was the evacuation hospital. These planned arrangements were frequently disrupted. Sometimes the surgical teams were the very first to treat severely wounded soldiers right on the edge of the active battlefields.

The Normandy Invasion

Our team waded onto Utah Beach two hours after midnight D-Day, June 6, 1944. We were without orders and had no supplies. Nearby on the beach was a Clearing Station. We used their basic supplies and from then on around the clock, we operated on severe chest and abdominal wounds.

During this period, our "sterile technique" was truly a fruitless gesture. The sterility of the instruments and the gloves ended with the first patient. Thereafter, we soaked



Figure 2. Photograph of chest incision of Mr. Terrance K. Fitzgerald (Age 71) in June 1995, 54 years after his successful cardiac surgery.

everything in bichloride of mercury solution and used it over and over, until fresh supplies began to reach us.

Living conditions were crude for everyone. For our team, sleep was a ten minute cat-nap on a blanket on the ground, wet or dry, near the saw horses, while the next patient was being prepared. Food was K-rations whenever the opportunity presented. Water laced with chlorine came from a canteen. Every two or three days there was a chance for a shave and a bath out of a helmet.

This unrelenting battlefield experience gave us a fine honing in emergency techniques and in teamwork which prepared us well for the challenges to follow. Though there were a few replacements, the team work remained superb.

The St. Lo Offensive

On July 3, 1944, my surgical team was sent forward, a little before daylight, to provide medical support to the ferocious attack on St. Lô, which was part of the desperate Allied "Breakout" attempt in Normandy. It was raining.

We moved out in a weapons carrier, my team of five—three officers and two medical technicians. Also, we had a driver and a helper, plus two x-ray technicians with portable battery-

operated machines and lights. We were equipped with a Heidebrink anaesthesia machine, my Army issue bag of excellent surgical instruments, and a dozen bottles of type "O" universal donor blood. In addition, we had containers of sterile dressings, antiseptic solutions, rubber gloves, adhesive tape, needles, sutures, etc., and finally, we had two saw horses (my "operating table").

Every day we received a generous number of units of whole blood. (Later in the war, most were drawn in the United States within the previous 24 hours, were flown overseas in bombers, then in light planes, and finally delivered via Jeep to our surgical teams in action.) Blood transfusion in itself saved many lives of the severely wounded.

The battle was raging. We pulled up as close to the action as we dared, behind a little rise. Just beyond, and on the other side of the rise, we saw a big excavation in the ground, perhaps 10 by 12 by 6 feet. The rise was probably the dirt thrown up from the hole. The opposite side of the pit was sloped and marked by fresh tank tracks. No doubt it was an abandoned German tank pit or gun emplacement. The rise had been thrown up by the enemy toward the English Channel for protection from our expected invasion forces. But now that the Germans had been driven out, we used the pit, and so the rise gave our weapons carrier some shelter.

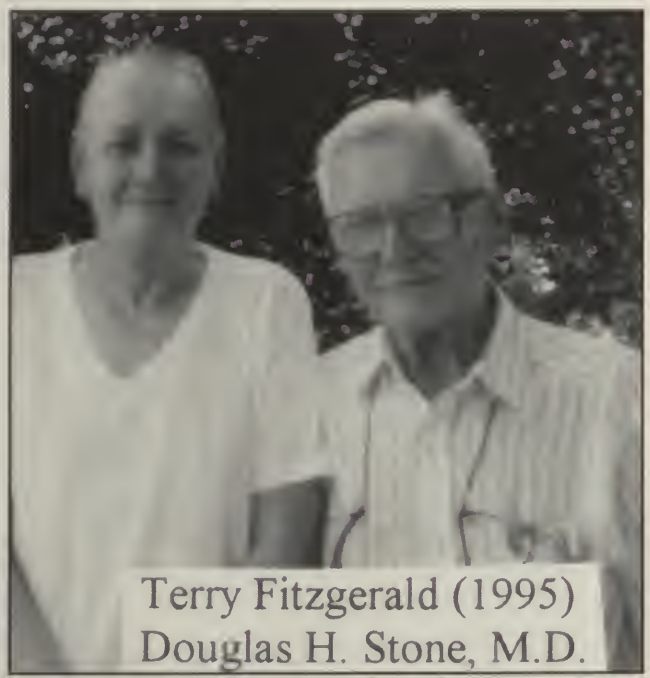


Figure 3. Photograph of Dr. Douglas H. Stone and Mr. Terrance Fitzgerald taken in Fonda, Iowa, June 1995.

We jumped into the excavation, unloaded our saw horses and other equipment and prepared to go to work immediately. It was raining steadily and we were all out in the open, soaking wet and muddy. Now that the rise was behind us, we were not well protected from German fire, except for being down in their tank pit. For a while the rain fell on us and in the open wounds as we were operating. Later, our resourceful men rigged a makeshift cover for us, taking canvas from the top of the weapons carrier.

At this point there was a shell burst nearby and very shortly two corpsmen slid a litter with a badly wounded soldier on it over the muddy edge of our hole. He was not breathing and had no detectable pulse. The medical corpsmen litter bearers looked at me, shook their heads dolefully, and scrambled back over the rim of the hole to return to their rescue of the battlefield wounded. These brave battlefield corpsmen saved many lives, sometimes losing their own in their attempts.

We immediately decided to give this man his chance, slim as it seemed. The litter was put across the saw horses and while I soaked my hands in bichloride solution and pulled on sterile gloves, our technicians cut away his shirt with their combat knives. This exposed a "sucking" wound of the upper right chest. The wound had been stuffed with a piece of GI raincoat to prevent the sucking action. Terry says he remembers the corpsman doing this, right on the spot where he was wounded, "to keep me from suffocating," he was told before he lost consciousness. Terry also remembers that it was raining. He even recalls passing the German pit that just minutes later would be the site of his operation.

The patient was unable to breathe on his own. Our anesthetist immediately applied a mask to the patient and pumped in oxygen under manual pressure to the rubber bag attached to the machine. This artificial respiration also helped to inflate the remaining functional lung, the other having collapsed. Simultaneously one of the technicians swabbed the chest wall with antiseptic solution, then he soaked his hands and became our instrument man. I quickly threw four sterile towels around the wound site and made an incision directly through the skin wound. It was necessary to rapidly remove sections of four ribs to give myself room in which to operate. The chest cavity was full of blood. I actually had to bale it out by the handful. Our technicians got the suction working, which enabled me to see the damaged area. They were unable to insert needles into the collapsed peripheral veins to give

the crucial blood and electrolyte fluids. I told the technicians to remove the blood pressure cuff from the patient's arm and to wrap it around the blood donor bag. This improvisation was in anticipation of the need to steadily force the blood to flow faster through the tube into the heart.

By this time I had the heart exposed and moved gently to the patient's right. The critical wound was an elongated vertical gash into the right ventricle, now barely oozing blood. I plugged the gash with my right index finger along the wound and while holding the flaccid heart in the same hand gently and rhythmically massaged it. With my left hand I took the large donor needle from the technician having to ignore "sterile" technique, and inserted it into the right atrial chamber of the heart. Three liters or more of blood were given as rapidly as possible. The effect was magical. Veins grew visible in the arms, and more blood was started in them. The above actions were crucial, making it possible to proceed with the definitive operation.

With my finger still plugging the deep gash, I took a large curved Bloodgood suture needle in the left hand, passed it deep through the full thickness of the heart muscle on one side of the gash, under and around my finger and into and out through the full thickness of the heart muscle on the other side. This was done quickly four times in a row. Then, as I slid my finger out, all four sutures were pulled up gently by Bill Moore, my assistant. I quickly tied square knots in each suture one by one, snugly, but not tightly. Over this incision I sutured a flap of pericardium to cover and support the closure. The sac itself was not fully closed for fear a possible accumulation of blood into the empty sac might compress the heart and inhibit its action or cause localized infection.

After closure of the heart wound had been completed, I resumed cardiac massage to the flaccid heart muscle and could feel it perceptibly firming up and fibrillating. Soon a little rhythm or beat was detectable. As I continued this action, the patient began to change color from paper white to pale pink. His veins were filling up, so now they could be used to give additional blood more rapidly. We all gave a heartfelt sigh of relief. We knew we had won the all-important first round and had made a good start.

By now all bleeding had stopped. The patient had received and retained an estimated five liters of whole blood, was showing an even better color, and had a detectable pulse.

Finally, we checked around the chest cavity for "bleeders," using the suction apparatus to empty all fluid and to get a

Dr. Douglas H. Stone, a Baltimorean and a Harvard Medical School graduate (1937), trained in general surgery including the chief residency at the Union Memorial Hospital, Baltimore, from 1937 to 1941. After an enviable record in the service during World War II, he returned to Baltimore as an outstanding surgeon and teacher from 1945 to 1968. He then joined the surgical staff of the Veteran's Administration Medical Center in Asheville, North Carolina, from which he retired as chief of the general surgical section in 1980. He and his wife, Essie, continue to live in Asheville.

Dr. Stone's experience represents a significant contribution to the annals of surgery. Under dire circumstances, in front-line military combat, Dr. Stone and his surgical team successfully performed open heart surgery to repair a seriously damaged, lacerated heart. After expert postsurgical care, the injured soldier recovered fully and has enjoyed a long and healthy life. This remarkable event occurred before the advent of the cardiac surgery period which began in 1945. Previously, a few emergency cardiac procedures had been performed, mostly without success. A short bibliography had been prepared with reference to early heart surgery.

–Theodore E. Woodward, M.D.

"dry" chest. A couple of hemastatic sutures were quickly placed in a shallow laceration of the right lung. We then inserted our drains through stab wounds into the chest cavity, instilled 40,000 units of penicillin into the chest, sprinkled sulfanilamide powder into the chest and tissues, and carefully closed the incision in layers.

Terry did not develop an infection, despite the primitive circumstances of his wounding and operation. We were constantly amazed at how few infections there were in these hardy, healthy young soldiers. It was only towards the end of the Beachhead action that penicillin became available to us in the field and seemed to be so effective and precious.

Our battery-operated field x-ray machine films revealed to us that there was a jagged piece of shrapnel about one inch long by a half inch wide which appeared to be embedded in the liver below the diaphragm, slightly to the left of center. Experience had taught us that to attempt to remove this would have required major additional surgery which was out of the question in this situation. It had also taught us that unless such metal fragments were the cause of major bleeding, which was not the case here, they seldom caused trouble. To this day, the shrapnel is still visible by x-ray and has caused no further harm.

The patient informs me that he is sure this was a fragment from a mortar shell fired from a German tank hiding behind a little village church nearby. He and his patrol had been ordered to knock out that tank. It was probably the tank that had previously occupied our pit.

We surmised that Terry had thrown himself forward, the shrapnel had entered his chest just under the right clavicle, cut the slice through the muscular wall into the chamber of his heart, and passed through the diaphragm and into the liver, slightly to the left of center.

When Terry was brought to us by the medical corpsmen, our technicians could not find his dogtags. They could not fill out his "EMT" [emergency medical tag]. It was deduced from the location of his wound that the shrapnel had cut the chain supporting his identification and that his dogtags were lost on the battlefield. We did not know who he was or what outfit he belonged to. We couldn't identify him from the content of his pockets. It was only when he regained consciousness, days after the operation, that he established his identity. Terry said if he hadn't survived, he might now be occupying the Tomb of the Unknown Soldier.



Figure 4. Major Douglas H. Stone M.C. U.S.A.

It was providential for Terry, not only that the wound in his heart did not involve the major cardiac vessels or nerve trunks, but also that he was our first patient that day at that particular battlefield. One of the most painful things that casualty surgeons had to do was to decide after careful, thoughtful triage which of those desperately wounded to operate on first.

Terry had been sent back immediately to the platoon hospital in the weapons carrier with an attending technician. As other patients were operated on they too were sent back, though at times some waited on the wet ground wrapped in blankets.

The returning weapons carrier brought us fresh supplies of wrapped sterilized instruments, sutures, dressings, blood, IV fluids, antibiotics, as well as K-rations, water and more blankets.

The casualties kept coming in all day and the next night and we were very busy. We even worked to save some desperately wounded German captives, after first caring for all our American soldiers.

As the battle moved away from us and the patients dwindled, we moved back to the hospital platoon. We operated on the last of our patients in the luxuries of tent cover, replenished supplies at hand, and with much more

effective sterility. The hospital platoon stayed there for three more days to care for our postoperative patients. Terry was doing extremely well. Being the exuberant youth that he was, he actually got himself off his cot and onto his feet for a few seconds before being quickly ordered back to his cot. This happened just before the hospital was ordered forward and our postoperative patients were turned over to a holding company for further care. In one of his recent letters, Terry wrote that after that episode, unremembered by him, he was not ambulatory until he returned to the United States. He had been told by a nurse shortly after his operation: "Captain Stone operated on me immediately. He cut four of my ribs away, reached inside my chest and pulled my heart to the right. He removed the blood from my chest and held his finger in the hole in my heart to stop the flow of blood. My veins collapsed, and Captain Stone injected blood directly into my heart and veins. They said I had been declared dead once during the operation but Captain Stone would not give up."

Terry was sent back along the chain of military hospitals in Normandy to England and finally to the United States.

The follow-up

Reporters from the military newspapers came to our hospital and wanted to talk to me about this unusual case. I was simply too busy to take the time. So, they put together a version of what had happened from accounts of platoon personnel who had been on hand during the operation and also from others who were not there when the operation was performed. Their resulting description of the event was the one published. From this came all the subsequent press releases in the United States.

The factors which were brought together then to save Terry's life were excellent training in general surgery, fine teamwork, the right instruments, effective anesthesia and oxygen, ample quantities of whole donor "O" blood, penicillin, sulfanilanide, and the youth and health of the patient.

For years after the war, I remembered what a GI had mistakenly told me in France—that "Clarence" Fitzgerald came from Fargo, North Dakota. However, one day when I was going through my World War II memorabilia, I came across several articles from the Baltimore newspapers that described Terry's battlefield operation. Their information set me straight that Fonda, Iowa, not Fargo, North Dakota, was actually Terry's hometown.

In June 1995, while my wife, Essie, and I were on an automobile trip through the West, we made a search for Terry, and found him in his comfortable home in Fonda, Iowa. He was doing well at age 71.

We met his wife, Vivian, a daughter and a grandson, and enjoyed an interesting and pleasant visit. Terry showed me his old battle scar, which I photographed, and we relived the momentous occasion which had brought us together. He related his many hospital experiences from the time of the operation until he finally reached home in Fonda, February 1, 1945.

Terry told me that in 1994 during one of his many checkups, a cardiologist remarked that the operation could not have taken place, because open heart surgery had not been published in the surgical journals until 1959.

While writing this paper, I again called Fonda and talked with Terry and Vivian. Terry is now 74 years old and doing well. We had a lively conversation and will continue to keep in touch.

God was with Terry 55 years ago, and I pray that He always will be.

Acknowledgment

Grateful appreciation is expressed to Harriet Kerr for careful typing of the manuscript, to the Medical Media Services Department of the Baltimore Veteran's Administration Medical Center for preparation of the photographs and to Mr. Terrance Fitzgerald for his permission to use the old photographs.

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What Your Patients MAY BE READING

Anti-Aging Claims: Schemes, Scams and Successes

Do they take years off your face and fanny or just dollars out of your wallet?

This article provides a very detailed description of the claims made regarding DHEA, melatonin, coenzyme Q10, hGH, Ginkgo biloba and others. For each product, the author states the claim made and describes what effect the product actually has on the body. Relevant clinical research is noted in easy to understand terminology. The author also provides "tried and true" aging deterrents, including limiting fat intake and exercising. A list of suggested reading is also provided.

—*more*, April 1999

Protecting Your Child From Pain

Although it was once thought that children "bounce-back" quickly from painful events, the author of this article discusses the immediate and long-term effects pain may have on children, especially infants. Circumcision, burns, and shots are discussed in detail. The author points out that pediatric pain has traditionally not been a part of medical textbooks. But suggestions are provided for how parents and physicians can work together to limit children's pain and the effect of the pain.

—*Parenting*, May 1999

Coming Attractions

Fans of magnets claim that they relieve back pain, soothe sore feet, and dispel aches bodywide. Are they worth a try?

This article begins with one physician's viewpoint. After being visited by a magnet salesperson, this physician, who suffered chronic back stiffness, decided to try the magnets herself. After discovering they worked she began researching the topic. This article describes the small number of studies conducted in the United States and mentions those performed in other countries. Although the author points out that no one is sure why or how the magnets reduce pain, they are being used to treat numerous ailments from allergies to chronic fatigue. The article provides an organization contact for further information.

—*New Age*, May/June 1999

Allergy Answers

For allergy sufferers the best defense may be knowing the causes and symptoms of allergies according to this article. The author offers some information about the ways allergies can affect people and a few recommendations for keeping their homes as trigger-free as possible. The author goes as far as to recommend that when pollen, mold and ragweed counts are high, those with these allergies avoid going outside at all during the day. Genetic predisposition to allergies is briefly discussed, including the prevelance of allergies among African Americans. Allergy medications are described, and while allergy shots are included in the discussion, the author points out that they do not cure the allergy, but rather just relieve the symptoms.

—*Essence*, May 1999

The Healthy Back Report: Moves, Tips and Treatments to Keep Your Back Pain-Free for Life

Oh your aching back. Self provides tension-taming remedies and shows you how to prevent future injuries and improve your posture.

Basically a primer on back health, this article covers many topics in a quick, easy-to-read way. The author starts out by introducing hidden sources of back problems, including wearing worn out shoes, smoking, and riding in a car. Special notations are made for people who work out regularly at the gym. Exercises with illustrations are included. A chart listing the options for back treatments along with the costs, benefits, and disadvantages includes exercise, acupuncture, massage therapy, chiropractic care, and surgical evaluation. Tips are provided and include suggestions for nearly every activity including computer use, driving, air travel, sleeping, and sex.

—*Self*, April 1999

Parris N. Glendening - Governor of Maryland

Martin P. Wasserman, M.D., J.D., Secretary
Department of Health & Mental Hygiene

DHMH Maryland Department of Health & Mental Hygiene

Carlessia A. Hussein, Dr. P.H., Director
Community and Public Health Admin

Diane M. Dwyer, M.D., Director
Epidemiology & Disease Control Program

EPIDEMIOLOGY AND DISEASE CONTROL PROGRAM
201 West Preston Street, Baltimore, Maryland 21201 (410) 767-6700

March, 1999
Rotavirus Vaccine now recommended for all infants

Rotavirus vaccine has recently been licensed by the FDA for prevention of rotavirus infections in children.
Rotavirus infections are the most common cause of severe diarrhea in children. Most children acquire the infection naturally during the first five years of life. This illness is estimated to cause about 50,000 hospitalizations each year, and is most often seen in children aged 3 to 24 months. Direct and indirect costs of rotavirus infections are estimated at $ 1.3 - 1.5 billions.

This virus is present worldwide, and is very infectious. Even as few as 100 virus particles, if ingested, can cause illness. Most disease in the United States is caused by four serotypes of this virus.

Some rotavirus illnesses can be severe:
- Some cases include severe diarrhea and vomiting
- The most dangerous complication to the individual child is dehydration

How is the vaccine prepared?
The rotavirus vaccine is made from an attenuated rhesus monkey rotavirus. Genes from several different strains are included in the vaccine, to provide coverage against the more common rotavirus serotypes. This virus is therefore able to provoke an immune response against the four most virulent strains.

How effective is the vaccine?

The oral, live rotavirus vaccine recently licensed is designed to provoke an antibody response in young children. A course of three doses of the rotavirus vaccine has been shown to protect children from about 70-95% of severe diarrhea, and in one study prevented 100% of cases from developing severe illness. The vaccine can be administered along with: DPT-Hib, OPV, IPV, or Hepatitis B vaccines.

How will the vaccine be administered?

Currently, the manufacturer recommends administering three doses by mouth ***at 2, 4, and 6 months of age.***
Infants over 6 months of age have an increased risk of side effects, and for this reason "late" vaccinations are not recommended. Data on safety and effectiveness are not yet available.

Rotavirus Fact Sheet

Rotavirus can cause serious diarrhea in young children during the first five years of life. This virus is present worldwide, and is very infectious. Rotavirus is more frequent during the late winter and early spring in the northeastern U.S. It is expensive; one way or another, this infection costs more than one billion dollars each year.

Not all rotavirus illnesses are severe, but some can be. Some children with rotavirus infection show no symptoms. In other children, symptoms include include severe diarrhea, abdominal cramps and vomiting. When rotavirus-caused diarrhea becomes severe, a child may lose a large proportion of their body fluid ("dehydration"). Some children with dehydration may die.

Rotavirus control requires more than just good hygiene; and a vaccine is now available.
Like some other viruses, like poliovirus or hepatitis A virus, rotaviruses are shed in the feces (stool) for weeks. This virus may be shed in discharges from the mouth and nose. Another person catches the virus by getting it in their mouth, either through poor personal hygiene or eating contaminated food or drink. It is not know if rotavirus infection can be transmitted through droplets in the air. To prevent this disease, national immunization experts have called for vaccination in early childhood.

The rotavirus vaccine is made from weakened ("attenuated") rotavirus. Genes from several common rotavirus types are included in the vaccine. This allows coverage against the more common human rotavirus serotypes. This vaccine can stimulate a protective immune response for the child, and has been shown to protect against the most severe types of rotavirus infection.

What do studies of the vaccine's effectiveness show?
The rotavirus vaccine recently licensed is designed for young children. A course of three doses of the rotavirus vaccine, taken by mouth, protects children from about 70-95% of severe diarrhea, and in one study prevented 100% of cases from developing severe illness. The vaccine can be administered along with other vaccines, like polio or DPT or Hepatitis B vaccines, so **no additional doctor visits are needed**.

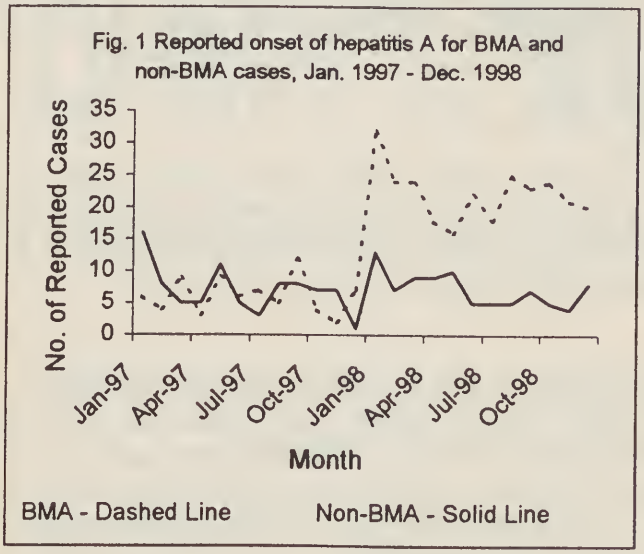
When should a child receive the rotavirus vaccine doses?
Starting in early 1999, a child should be given three doses by mouth at 2, 4, and 6 months of age. Infants over 6 months of age have an increased risk of side effects, and for this reason starting the vaccine after 6 months of age is not recommended. In the near future, it is expected that rotavirus vaccine will be added to the schedule of vaccinations required by law. Vaccine Information Sheets (VIS) on rotavirus are expected very soon.

Even without vaccine, you can help prevent rotavirus infections

- Don't forget: hand-washing helps prevent rotavirus and other serious infections from being transmitted to others.
- Hands should be washed with soap and water after using the toilet, after changing diapers, before touching food and eating, and after sneezing or coughing.

For more information about rotavirus and rotavirus vaccine:
Please call the Maryland State Department of Health and Mental Hygiene, Center for Immunization, at 410-767-6679.

Huge Increase in Hepatitis A Continues in The Baltimore Metropolitan Area



BACKGROUND:

The hepatitis A virus is spread person-to-person through fecal-oral contact and through common source outbreaks involving contaminated food or water. Groups at increased risk of contracting hepatitis A include household and sexual contacts of cases, illicit drug users, travelers to developing countries, and men who have sex with men. In addition, food service, day care, and health care workers who are hepatitis A cases are at high risk of transmitting the virus to others once they are infected.

The illness is characterized by abrupt onset of symptoms consisting of fever, malaise, anorexia, nausea, abdominal pains, and occasionally diarrhea, followed within a few days by jaundice. Many infections are asymptomatic, especially in young children. The incubation period ranges from 2 to 6 weeks (mean of 4 weeks) and the duration of illness normally lasts 1 to 2 weeks. Rarely, prolonged severe disease lasting several months may occur. Severity increases with age although complete recovery is still expected. According to the CDC, people with chronic infection with the hepatitis C virus are at high risk for development of severe complications when also infected with hepatitis A.

HEPATITIS A IN MARYLAND

During 1998, the Baltimore metropolitan area* (BMA) has experienced a huge increase in the number of reported hepatitis A cases. A total of 263 confirmed** cases of hepatitis A were reported during 1998 (annual rate: 10.7/100,000) while in 1997, only 78 confirmed cases were reported (annual rate: 3.2/100,000). An additional 89 unconfirmed cases were reported from the BMA during 1998 and are currently being evaluated. It is likely that many of these cases will attain confirmed status. The reported incidence of hepatitis A has remained low throughout the rest of Maryland. During 1997 and 1998 the non-BMA counties reported 108 (annual rate: 4.1/100,000) and 88 (annual rate: 3.3/100,00) cases respectively.

As seen in Figure 1, the BMA experienced a rapid increase in the number of reported hepatitis A cases in January of 1998. Furthermore, this increase has remained relatively steady throughout 1998 and preliminarily into 1999.

The local health departments serving the BMA, in conjunction with DHMH, are currently investigating this recent increase in hepatitis A cases. At this time, no one single risk factor can explain the recent increase although preliminary analysis indicates that illicit drug users in the BMA are at significant risk of contracting hepatitis A. In addition, some cases represent small clusters of food borne outbreaks.

RECOMMENDATIONS

The prevention and control of hepatitis A depends upon the rapid identification of cases and the appropriate management of contacts. The following recommendations address these issues:

- REPORT CASES IMMEDIATELY

Physician and other health care providers are required to report hepatitis A cases to their local health department (Code of Maryland Regulations, Section 10.06.01.03). Laboratories must report tests showing positive hepatitis A IgM antibody (Chapter 18, Article 205, Annotated Code of Maryland). Prompt and accurate reporting allows (a) early prophylaxis of contacts, (b) recognition and prevention of possible outbreaks, © early identification and education of contacts who may be unknowingly spreading the virus, and (d) recommendations for child care centers and food handlers affected by hepatitis A to be made by local health departments.

- DIAGNOSE CASES BY CHECKING FOR IgM ANTIBODY TO HEPATITIS A
  A definitive diagnosis of hepatitis A is established by the presence of IgM antibody to hepatitis A virus in serum collected during the acute or early convalescent phase of the disease. A presumptive diagnosis can be made by the presence of clinical symptoms.
- INTERVIEW CASES TO DETERMINE SOURCE AND SPREAD
  Hepatitis A is easily transmitted. Therefore, cases and all close contacts (household and sexual) must be interviewed and made aware of prophylaxis and preventive measures including appropriate hygiene.
- GIVE CONTACTS IMMUNE GLOBULIN AS SOON AS POSSIBLE
  Immune globulin (IG) should be given to contacts as soon as possible after exposure because secondary and tertiary attack rates are high. Current recommendations call for IG prophylaxis within two weeks of last exposure. Prophylaxis after two weeks may be indicated for contacts or contacts of contacts when ongoing transmission may be occurring, and when household members may continue to be exposed to other asymptomatic cases, such as diapered children. IG is available through your local health department. Follow package insert for dosage recommendations for post-exposure prophylaxis.
- CONSIDER HEPATITIS A VACCINATION FOR HIGH RISK CONTACTS
  Vaccine is now available for prevention of hepatitis A. Contacts of hepatitis A cases may receive IG and the first dose of vaccine at the same time. Contacts who should receive vaccine are those who are in high risk groups and for whom the CDC recommends routine vaccination. These groups include men who have sex with men, illicit drug users, persons who have occupational risk for hepatitis A, persons who have chronic liver disease, and persons with clotting-factor disorders. Contacts of cases who are food service, day care, or health care workers may also be suitable candidates for vaccine. For more information on hepatitis A vaccine use, refer to CDC. MMWR- Recommendations and Reports. *Prevention of Hepatitis A through Active and Passive Immunization*. December 27, 1996/ vol. 65/No. RR-15 or visit www.cdc.gov.
- EDUCATE CASES AND HOUSEHOLD MEMBERS ABOUT HYGIENE
  Strict hand washing with soap and water after using the bathroom, after diapering, and before preparing food must be instituted. More complete recommendations are available by calling your local health department or DHMH at 410-767-6677. A hepatitis A fact sheet is also available by visiting the DHMH web site at www.edcp.org or by calling your local health department.

*BMA includes Carroll, Harford, Howard, Anne Arundel, and Baltimore County and Baltimore City.

**Confirmed cases are those which are laboratory confirmed and experience symptoms consistent with Hepatitis A.

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Physician Volunteers Sought

The Maryland Defense Force (MMDF) is in search of physician volunteers. The MDDF, along with the Army National Guard and the Air National Guard, is a part of the military department of the state of Maryland. The military department is composed of citizen volunteers, both male and female, organized along military lines. The MDDF is not made up of troops of war under the control of the President of the United States. Its members serve the citizens of the state of Maryland in response to orders from our governor. The MDDF cannot be federalized or sent beyond the borders of Maryland.

The medical command of the MDDF assists the National Guard, the Maryland State Police, and other law enforcement agencies, as well as the citizens of this state, when requested. The MDDF provides emergency support to civil authorities in preservation of life, protection of property, and participates in such activities as search and rescue.

The MDDF can be ordered into full active service only by the governor or his adjutant general, and will then be paid according to rank, the same as the National Guard. While prior military service and rank are desirable, they are not necessary. Academic accomplishments and experience are recognized. Appropriate instruction will be given as needed. Increasing one's skills and value, and continuing service should result in regular promotions. Worker's compensation benefits are in effect when engaged in training or other authorized activity. Also, expenses incurred are tax deductible, including uniforms, travel, and related items. MDDF troops wear the basic U.S. Army uniform with certain differences.

Training for basic through advanced search and rescue (SAR), land navigation, radio communication, as well as basic, advanced, and command staff training, CPR review, and basic through advanced first aid are provided, as well as a variety of other skills.

If you possess pride in this state and your country, the MDDF wants you. For more detailed information, please contact Colonel George H. Greenstein, M.D., at 410-486-8212.

The Johns Hopkins Medical Institutions

All courses at the Thomas B. Turner Building unless otherwise indicated. For information on continuing medical education activities, contact the Office of Continuing Medical Education, 720 Rutland Ave., Baltimore, MD 21205, 410-955-2959, Fax 410-955-0807 (e-mail: cmenet@som.adm.jhu.edu).

9th annual pediatric allergy and immunology for the practitioner, sponsored by The Johns Hopkins University School of Medicine. Credits: 14 Cat 1 AMA Credits. Fee: $295 physicans; $220/residents, fellows, allied health professionals. **May 13–14**

Clinical preventive medicine: delivery of preventive services in the ambulatory setting, sponsored by The John Hopkins University School of Medicine, division of general internal medicine, department of medicine, at the Annapolis Marriott Waterfront Hotel, Annapolis, Maryland. Credits: 9.5 Cat 1 AMA credits; 8.25 AAFP prescribed credits. Fee: $300/physicians; $150/residents, fellows, allied health professionals. **June 14–15**

Seventh annual advanced topics in CT with emphasis on spiral CT, sponsored by the department of radiology, Johns Hopkins University School of Medicine at The Eldorado Hotel, Santa Fe, New Mexico. Credits: 16 Cat 1 AMA credits. Fee: $525/physicians; $475/residents, fellows. **July 22–25**

Johns Hopkins internal medicine board review course, sponsored by the department of medicine, Johns Hopkins Hospital at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 52.5 Cat 1 AMA credits. Fee: $800/physicians (before 5/1); $850 (after 5/1); $750/residents (before 5/1); $800 (after 5/1). **July 31–Aug. 5**

Women's cancer issues for the generalist, sponsored by the John Hopkins University Schoolof Medicine at Manor Vail Lodge Vail, Colorado. Credits: 6 Cat 1 AMA credits. Fee: $195/physicians, $155/residents, allied health professionals. **Aug. 6–7**

Perioperative management, sponsored by the Johns Hopkins University School of Medicine at The St. Regis Aspen Hotel, Aspen, Colorado. Credits: 21 Cat 1 AMA credits. Fee: $525/physicians (before 7/16), $550 (after 7/16), $490/residents, fellows, CRNAs, allied health professionals (before 7/16), $515 (after 7/16). **Aug. 16–19**

University of Maryland School of Medicine

For each course, additional information may be obtained by contacting the Program of Continuing Education, University of Maryland School of Medicine, Room 14-011, BRB, 655 W. Baltimore St., Baltimore, MD 21201 (410-706-3956), or by calling the phone number listed after a specific program. Fax 410-706-3103.

Problem solving in diagnostic radiology, sponsored by The University of Maryland at The Homestead 1776, Hot Springs, Virginia. Info: Ryals & Associates, Inc., P.O. Box 1925, Roswell, GA. 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Aug. 12–15**

Miscellaneous (continued)

Oncology in the new millennium, sponsored by The Cancer Center, The Barnes-Jewish Hospital Cancer Committee, The Radiation Oncology Center, and the Office of Continuing Medical Education at Washington University School of Medicine, at the Eric P. Newman Education Center, 320 South Euclid Avenue, St. Louis, Missouri. Credits: 11.5 Cat 1 AMA credits. Fee: $150/physicians, $100/physicians-in-training, allied health professionals, Washington University School Medicine staff. Info: Continuing Medical Education, Washington University School of Medicine, Campus Box 8063, 660 South Euclid Ave., St. Louis, MO 63110-1093. (800) 325-9862, (314) 362-6891, Fax: (314) 362-1087. E-Mail: CME@msnotes.wustl.edu. — **Apr. 23–25**

Advances in alternatives in the clinical environment, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus in Williamsburg, Virginia. Info: Nancie Mervis, (800) 413-2872 or (804) 828-3640, Fax: (804) 828-7438. — **Apr. 23–25**

Clinical auscultation of the heart, sponsored by American College of Cardiology, at Georgetown University Medical Center, Washington, DC. Credits: 21.5 Cat 1 AMA credits. Info: Registration Secretary, Extramural Programs, American College of Cardiology. (800)253-4636, ext. 695 (outside the U.S. and Canada) 301-897-5400, ext. 695) Fax: 301-897-9745. — **May 12–14**

Excellence in diabetes management, sponsored by The Office of Continuing Medical Education, Eric P. Newman Education Center, Washington University Medical Center, 320 South Euclid Avenue, St. Louis, Missouri. Credits: 7.25 Cat 1 AMA credits. Fee: $95. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. — **May 15**

27th annual Hans Berger symposium, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus at the Omni Richmond Hotel & MCV Campus, Richmond Virginia. Credits: 13 Cat 1 AMA credits. Fee: $375. Info: Nancie Mervis, (800)413-2872, (804)828-3640, Fax: (804)828-7438. — **May 16–18**

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat 1 AMA credits. Fee: $425. Info: Continuing Medical Education, Washington University School of Medicine. (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. — **June 9**

23rd annual Williamsburg conference: cognitive, neuromedical & behavioral aspects of brain injury, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus at the Williamsburg Marriott Hotel, Williamsburg, Virginia. Credits: 23 Cat 1 AMA credits. Fee:$425. Info: Nancie Mervis, (800) 413-2872, (804)828-3640, Fax: (804)828-7438. — **June 10–13**

Women's health post grad course, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus, at Cavalier Resort, Virginia Beach, Virginia. Info: Nancie Mervis, (800)413-2872, (804)828-3640, Fax: (804) 828-7438. — **June 25–27**

Miscellaneous (continued)

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat I AMA credits. Fee:$425. Info: Continuing Medical Education, Washington University School of Medicine. (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. — **July 14**

21st annual pediatrics at the beach primary care conference, sponsored by the office of Continuing Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus, at Sheraton Oceanfront Hotel, Virginia Beach, Virginia. Credits: 13 Cat I AMA credits. Fee: $425. Info: Nancie Mervis, (800)413-2872, (804) 828-3640, Fax: (804)828-7438. — **July 16–18**

Diversity in caregiving: exploring possibilities, sponsored by the Alzheimer's Association at the Long Beach Convention Center in Long Beach, California. Info: (312) 335-5790, e-mail: Diane.Stultz@alz.org. — **July 18–21**

Breast imaging today and tomorrow, sponsored by the International Institute for Continuing Medical Education, Inc. at the La Fonda Hotel, Santa Fe, New Mexico. Fee: $750/physicians, $550/residents, fellows, mammographers. Info: Ryals & Associates, Inc. P.O.Box 1925, Roswell, GA, 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 2–5**

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat I AMA credits. Fee:$425. Info: Continuing Medical Education, Washington University School of Medicine. (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. — **Aug. 11**

The International Skeletal Society annual meeting and course, sponsored by The International Skeletal Society, and the University of California, San Diego at the Westin Hotel, Seattle, Washington. Fee: $750/physicians, $550/residents, fellows, technologists. Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 18–21**

Imaging in Tuscany, sponsored by The International Institute for Continuing Medical Education, Inc. at the Relais Fattoria Vigwale, Radda in Chianti, Italy. Fee: $895. Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 30–Sept. 3**

Advanced MR imaging, sponsored by the International Institute for Continuing Medical Education, Inc. at the Hotel InterContinental, Montreal, Quebec, Canada. Fee: $750/physicians, $550/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Sept. 3–5**

Internal derangements of joints: advance & intensive MR imaging, sponsored by the International Institute for Continuing Medical Education, Inc., at MGM Grand Hotel, Las Vegas, Nevada. Fee: $750/physicians, $550/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Sept. 24–26**

Miscellaneous (continued)

Mammography in Edinburgh, sponsored by the International Institute for Continuing Medical Education, Inc., at the George Intercontinental Hotel, Edinburgh, Scotland. Fee: $895/physicians, $695/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 27–30**

Breast imaging update, sponsored by the International Institute for Continuing Medical Education, Inc., at the Westin Resort, Hilton Head Island, South Carolina. Fee: $750/physicians, $550/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 30–Oct. 1**

PHYSICIAN'S RECOGNITION AWARD

For the months of December 1998 through February 1999, the physicians listed below received the American Medical Association (AMA) Physician's Recognition Award. Established in 1968, the award's purpose is to encourage physician participation in continuing medical education and to recognize those physicians who have voluntarily completed programs of continuing medical education.

Hosein Ali Arfaa
Michael Brody
Margaret Fox Bussey
Alan Marc Davick
Robert Edgar Dinker
Willarda V. Edwards
Nabil A. El-Shammaa
Michael Ereshevich
Richard Alan Farson
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Martin Wm Graf
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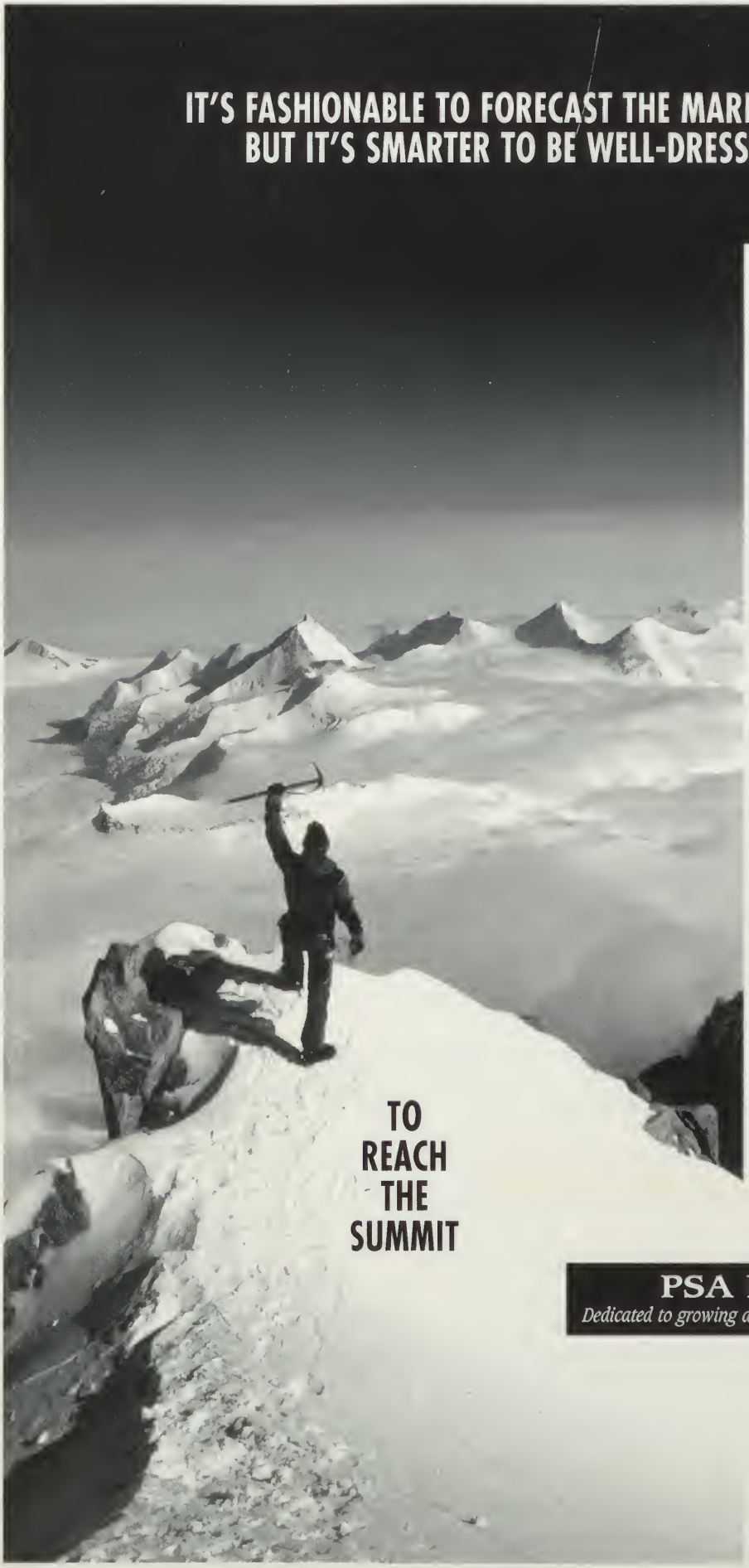
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Friday, October 15

9:30 - 11:00 House of Delegates

11:00 - noon

Woodward History of Medicine Lecture

Sherwin B. Nuland, MD, author and Clinical Professor, Yale Medical School

12:00 - 1:30

Remembering Our Beginnings

As part of our Bicentennial celebration, Joseph Gagliardi, MD, will impersonate Dr. Dobbs, a colonial period physician. Lunch will be provided.

1:30 - 3:00 Part I

3:30 - 5:00 Part II

Privacy and Confidentiality: Navigating an Ethical Whirlpool

The Honorable Ben Cardin (invited), The Honorable Casper Taylor, Harol Eist, MD, past President of the American Pediatrics Association, and Lawrence Gostin, JD, LLD, Georgetown University School of Law (invited)

6:00 - 8:00

Cocktail Reception

Saturday, October 16

7:30 - 9:00

Comprehensive Financial Planning

9:00 - 11:00 Part I

11:30 - 12:30 Part II

Recreating Ourselves: Ethical Ramifications of Genetic Research

Jeremy Rifkin, author, activist and philosopher, J. Craig Venter, PhD, President & Director, The Institute for Genomic Research

Saturday, October 16 *(cont.)*

12:30 - 2:00

Fraud and Abuse Compliance Luncheon

2:00 - 5:00 ***House of Delegates Meeting***

2:00 - 3:00 ***Concurrent Breakout Sessions***

3:30 - 4:30 ***Concurrent Breakout Sessions***

7:00 - midnight

Bicentennial Gala Celebration

Enjoy an evening of cocktails, dinner and dancing! Tickets are $50/person.

Sunday, October 17

8:00 - 10:30

Med Mutual Breakfast and Seminar

10:30 - 12:00

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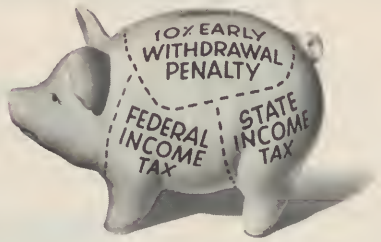
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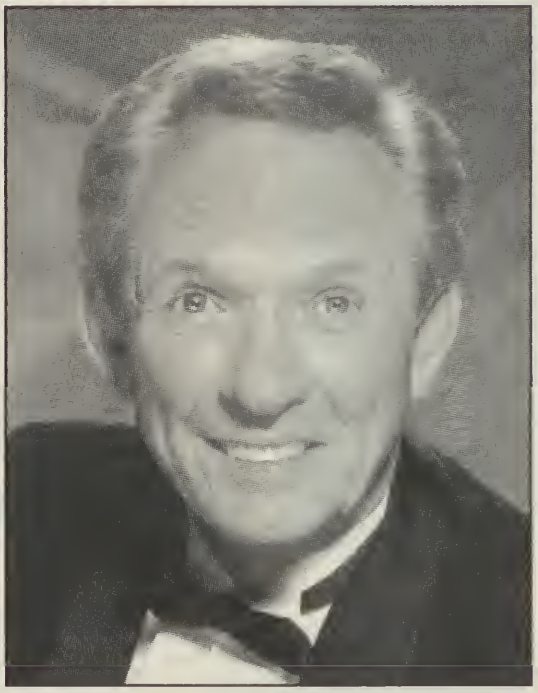
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In brief

ABSTRACT: *A retrospective look at colorectal cancer screening in one small rural practice*

Background: Guidelines from both the U.S. Preventive Services Task Force and the American Cancer Society recommend annual screening with fecal occult blood test, digital rectal exam, and screening with flexible sigmoidoscopy every three to five years for all asymptomatic average-risk persons over the age of 50. Any positive test result should be followed by total colonoscopy. The goal of this study was to assess the screening effort in a rural family practice office over the last five years.

Methods: One hundred charts of patients age 50 or greater were randomly selected from the active medical record section of one rural family practice office. These charts were reviewed for demographics, and for quantitative assessment of colorectal cancer screening, over the last five years, via any of five modalities (i.e., digital rectal exam, fecal occult blood testing, flexible sigmoidoscopy, double-contrast barium enema, and colonoscopy). It was also noted whether or not patients had symptoms attributable to colorectal disease when they underwent testing.

Results: One hundred charts of patients 50 to 96 years of age were reviewed. The average age was 65.6 years; 62% of subjects were women, and 86% were white. Physicians attempted to screen 45% of patients at least once during the five-year period. Digital rectal exam (DRE) had been offered to 37% of the patients at least once. None of the patients underwent flexible-sigmoidoscopy or double-contrast barium enema. One patient was referred for colonoscopy as a screening test, but never underwent the procedure. Eighteen percent of patients had been screened with fecal occult blood test at least once. The average number of times screened over the five-year period was 0.74. Rates of patient noncompliance were 2% (DRE-refusal) and 29% fecal occult blood testing (FOBT). Noncompliance for screening colonoscopy was 100%; however, this only represents one patient.

Conclusion: Physician compliance with current colorectal cancer screening guidelines was suboptimal from 1993 to 1998 in this practice. The current guidelines came out in 1995, which could be one explanation for a low screening rate from 1993 to 1995. This does not, however, explain low screening rates from 1995 to 1998.

Eric K. Johnson, M.D.
Dr. Johnson is a recent graduate of the University of Maryland School of Medicine. ■

American Cancer Society recommendations for colon and rectum screening

Beginning at age 50, both men and women should follow this testing schedule:

- Yearly fecal occult blood test plus flexible sigmoidoscopy and digital rectal examination every 5 years,* or
- Colonoscopy and digital rectal examination every 10 years,* or
- Double-contrast barium enema and digital rectal examination every 5-10 years.*

* *The digital rectal examination should be done at the same time as sigmoidoscopy, colonoscopy, or double-contrast barium enema.*

People should begin colorectal cancer screening earlier and/or undergo screening more often if they have any of the following colorectal cancer risk factors:

- a personal history of colorectal cancer or adenomatous polyps
- a strong family history of colorectal cancer or polyps (cancer or polyps in a first degree relative younger than 60 or in two first degree relatives of any age)
- a personal history of chronic inflammatory bowel disease
- families with hereditary colorectal cancer syndromes (familial adenomatous polyposis and hereditary non-polyposis colon cancer).

Katherine Farrell, M.D., M.P.H., is one of the authors of Soil Lead Abatement and Children's Blood Lead Levels in an Urban Setting, which was published in the December 1998 issue of the *American Journal of Public Health*. The article is the result of a federally funded study to determine whether abating lead in soil around their homes would protect children from lead poisoning. The Baltimore arm of the study showed that at the levels of soil contamination in the setting studied, abatement of soil alone was ineffective in lowering blood lead. The study looked at children whose blood levels were not elevated. Authors hope this finding will focus attention back on reducing levels of household contamination, as the major source of lead in the environment of children in Baltimore is still old deteriorating paint rather than soil. However, the authors note that reducing soil lead levels may still be appropriate in special circumstances or in cities where soil contamination is much higher. Dr. Farrell is deputy health officer, Anne Arundel County, Maryland.

Daily rounds by ICU physician lowers mortality rate after high-risk surgeries, according to a study published by Peter Pronovost, M.D., and colleagues. According to their article, published in the April 14, 1999, issue of *The Journal of the American Medical Association*, better staffed and organized intensive care units provide better outcomes and shorten the length of ICU and hospital stays for patients after high-risk abdominal aortic surgery. The researchers studied the outcomes of 2,987 abdominal aortic surgeries at 46 Maryland hospitals and questionnaires completed by ICU directors at 39 of the hospitals. Dr. Pronovost is from the Johns Hopkins University, Baltimore.

A discovery published in the March 1999 issue of *CHEST*, the journal of the American College of Chest Physicians, may explain why smokers get chronic bronchitis. According to the article, the same bacterial toxin that causes shock during severe bacterial infections and chronic bronchitis in some industrial workers has been found in cigarette smoke. Lead researcher, Jeffrey D. Hasday, M.D., says "Smoking one pack of cigarettes a day gives the same endotoxin exposure as working in a dusty cotton mill for eight hours." The authors indicate that this is the first time that bacterial endotoxin has been found in cigarette smoke. This toxin is reportedly one of the more powerful known triggers of bronchial inflammation. Dr. Hasday is associate professor of medicine at the University of Maryland School of Medicine, Baltimore, and director of the pulmonary outpatient clinic at the Baltimore VA Medical Center.

Mark Levine, M.D., and colleagues recently presented recommendations for daily vitamin C intake in an article published April 21, 1999, in *The Journal of the American Medical Association*. The authors conclude that the recommended dietary allowance for vitamin C should be raised from 60 mg to 100 to 200 mg. They also report that taking more than 1,000 mg daily can have adverse effects. According to the authors, the revised recommendations are based on new data, new criteria for devising recommendations, and new Dietary Reference Intake guidelines. Dr. Levine is with the National Institutes of Health in Bethesda, Maryland.

A study that appeared in the May 5, 1999, *Journal of the American Medical Association*, describes a new, simple method for assessing the risk of developing deadly metastatic cancer for men who have prostrate removal and experience rising PSA levels. Patrick Walsh, M.D., and colleagues compiled 10,000 patient-years of data from 1982 to 1997. The men were followed for an average of 5.3 years. From this, the researchers developed a chart physicians and patients can use to pinpoint the risk for developing metastatic cancer, which usually invades the bones of men with prostate cancer. Authors reveal that at 15 years post-surgery, a projected 82 percent of men will still be free from metastatic cancer and considered cured. Dr. Patrick Walsh is chief of urology at Johns Hopkins Medical Institutions, Baltimore. Other Hopkins co-authors were Alan Partin, Ph.D., and Mario Eisenberger, M.D., oncologist.

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Sentinel lymph node mapping for staging breast cancer: preliminary results of a prospective study

Saif ur Rehman, M.D., Armando Sardi, M.D., F.A.C.S., Ethan Spiegler, M.D., Jean Colandrea, M.D., and David Frishberg, M.D.

From St. Agnes HealthCare in Baltimore, where Drs. Rehman and Sardi are in the department of surgery, Dr. Spiegler is in the department of nuclear medicine, and Drs. Colandrea and Frishberg are in the department of pathology.

ABSTRACT: *Axillary lymph node dissection is the gold standard for staging breast cancer, but it is associated with significant morbidity and complications. Sentinel lymph node mapping technique has demonstrated a successful detection of the node or nodes more likely to have metastasis. Two techniques are being used to detect sentinel lymph node– intraoperative use of gamma detecting probe after injection of radio tracer preoperatively and the injection of blue dye and lymphatic mapping intraoperatively. We used both techniques. Twenty-four patients underwent sentinel lymph node mapping. Blue dye and gamma detecting probe identified sentinel lymph nodes in 78% and 77% of patients, respectively. Overall, 23 of 24 patients had a sentinel lymph node identified (96%). Ten patients had metastatic disease in the axilla. Out of these ten patients the only positive node/nodes were the sentinel lymph node in six patients. The other four patients had positive non-sentinel lymph node along with positive sentinel lymph node. All of the patients who had metastatic disease in the axilla were detected by the sentinel lymph node mapping technique. Therefore, no patient had positive non-sentinel lymph node if the sentinel lymph node was negative. This technique was 100% predictive of the axillary status. Sentinel lymph node mapping technique will change the management of breast cancer and will allow two-thirds of the patients with breast cancer to be managed without axillary lymph node dissection with a resulting reduction in morbidity and cost.*

Reprints: *Armando Sardi, M.D., St. Agnes HealthCare, 900 Caton Avenue, Baltimore, MD 21229*

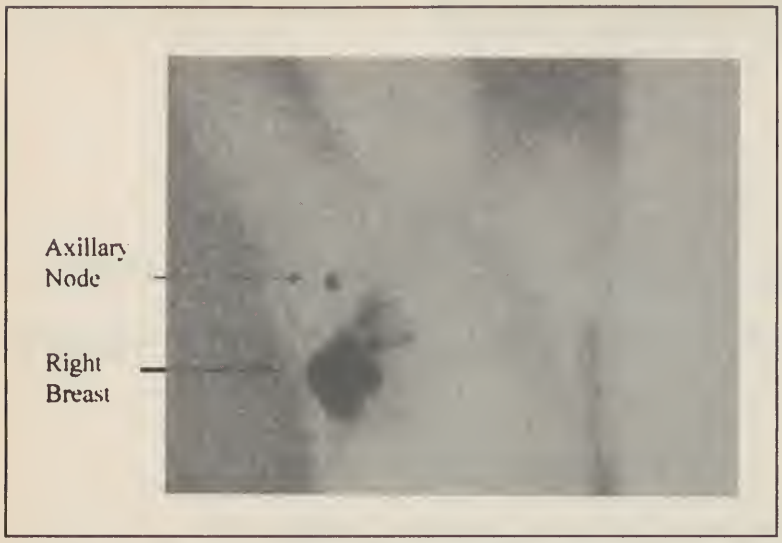


FIGURE 1. Preoperative lymphocintigraphy showing the injection of the primary site. One sentinel node is visualized in the axilla.

Breast cancer continues to be one of the most common cancers in the United States. It is expected that 176,300 new cases of breast cancer will be diagnosed in 1999, and 43,700 will die in the same year.[1] Axillary lymph node status is the most important prognostic indicator in patients with breast cancer.[2,3] Histopathological confirmation of the disease after an axillary lymph node dissection (ALND) remains the gold standard for staging breast cancer patients. Axillary lymph node involvement and the number of lymph nodes involved carry not only prognostic implications but also affect patient management. Thirty percent of patients with breast cancer will have axillary lymph node involvement at initial diagnosis. Therefore, 70% of patients do not benefit by an ALND. Physical examination carries up to 38% false negative rate, and no existing radiographic technique has achieved a level of accuracy good enough to identify patients with axillary lymph node metastasis.

The sentinel lymph node (SLN) technique, developed by Morton et al, has changed the management of patients with melanoma.[4] He initially performed the blue-dye technique. In 1993, Krag et al, performed radio-guided surgery using a gamma detecting probe (GDP).[5] Other investigators have also demonstrated its benefit in patients with melanoma and in patients with breast cancer.[5-9] Some centers are now only performing ALND in patients in whom the SLN is positive, while sparing the morbidity of this procedure in those patients with negative SLN. This technique promises to change the way we manage patients with breast cancer. It is important that every physician be able to demonstrate in his or her own experience that the status of the SLN reflects the status of the axilla, and that the SLN can be found in most of the patients. We present our initial experience with this technique in patients with breast cancer.



FIGURE 2. Preoperative lymphocintigraphy showing the injection of the primary site; the shine through effect does not allow visualization of a SLN. At surgery, a SLN was detected by the GDP and the blue dye.

Materials and methods

A prospective study was initiated at St. Agnes HealthCare to evaluate SLN in patients with breast cancer. SLN is defined as a blue node or a hot node with a 10/1 *ex vivo* radioactivity ratio in the SLN versus the non-SLN. Patients had biopsy-proven invasive breast cancer and were scheduled to undergo either breast conserving therapy or modified radical mastectomy.

The present study was approved by the institutional review board and all of the patients signed an informed consent. Preoperative lymphoscin-tigraphy was performed. At the time of surgery, the patient underwent a biopsy of SLN, followed in the same setting by the planned ALND, either as a component of a breast conservation or a modified radical mastectomy. The SLN to be excised was identified intraoperatively by lymphatic mapping using a vital blue dye and/or radioactive tracer.

Preoperative lymphocintigraphy. Twenty-two patients (2 patients refused injection of the radio tracer) received 0.3 to 1.96 mCi, of filtered technetium-99m-labeled sulfur colloid, diluted initially in 1 ml to 6 ml, more recently in 4 ml, injected in the four quadrants

around the primary tumor if palpable (in patients previously diagnosed with core needle biopsy) , or at the time of needle localization (in patients previously diagnosed by stereotactic guided needle biopsy), or around the biopsy cavity if previously excised. Patients were injected 2.5 to 20 hours before the planned surgical procedure. One mCi was injected in patients in whom the procedure was planned for the next day. At present, we administer 0.4 mCi diluted to 4 ml, two to three hours before the planned procedure. The patient is scanned for two hours to see if a sentinel node can be seen. In some patients a SLN can be identified (**Figure 1**), but frequently the shine through effect of the injection site precludes visualization of SLN (**Figure 2**). Shine through effect is defined as the scattered radiation produced by the primary injection site.

Injection of Isosulfan blue dye (Lymphazurin 1%). Five to 10 minutes before the beginning of the surgical procedure, 3 ml to 5 ml of Isosulfan blue are injected in a similar fashion around the tumor or into the wall of the biopsy cavity (if the tumor has been excised previously). The volume is adjusted according to the size of the breast and size of the mass. It is important that the dye be injected in the periphery of the tumor and not within the tumor itself. Injection of a seroma cavity should be avoided. It is important to avoid intradermal injection and tattooing of the overlying skin, which could persist for several months. Overall, 23 of 24 patients received the dye injection.

Intraoperative identification of SLN. The gamma detecting probe (NEOPROBE 1500)® is used to identify the area over the axilla with greatest radioactivity in counts per second (CPS). The GDP is a highly sophisticated gamma detector. It contains a cadmium telluride crystal in the tip. It relays to an amplifier which emits a digital readout and an auditory signal that is directly proportional to the amount of radioactivity detected. The skin is incised over this area and the node or nodes with the greatest radioactivity are removed. After excision of the SLN the background radioactivity should be significantly lower than that of the SLN. If there is no uptake of the radio tracer by the lymph nodes, an incision 3 cm in length (planned area for ALND site) is made 1 cm bellow the axillary hair line, and the incision carried down through the subcutaneous fat down to the clavipectoral fascia. At this level, blue lymphatic channels are followed to blue stained node or nodes. The node or nodes are removed. A SLN is considered any lymph node with increased counts in relation to the background with a 10/1 *ex vivo* radioactivity ratio in the SLN versus non-SLN and/or any blue stained node. A completion ALND is followed in all patients. In patients undergoing a mastectomy, the axilla was exposed by first creating the axillary skin flap and then searching for the SLN.

Pathological examination of SLN. The sentinel node or nodes are labeled separately and placed in separately labeled containers. Fifty cuts are made through the node, with every tenth cut stained for hematoxylin-eosin and selected intervening cuts retained for immunohistochemistry if required. If there is no evidence of tumor by hematoxylin-eosin staining (H&E), the sections are processed with immunohistochemical staining with cytokeratin (IHC). The cytokeratin used is a monoclonal mouse anti-human pan keratin antibody cocktail, clones AE1, AE3, CAM 5.2 and 35BH11 (Ventana Medical System, Tucson, AZ). This will allow easier identification of a small number of cells not identified by routine H & E. If cells are stained positive for cytokeratin, morphological examination of these cells is performed to assure that these cells are in fact malignant epithelial cells and not normal staining as seen in dendritic cells, or non-specific uptake by plasma cells. The non-SLN were only examined by hematoxylin-eosin staining. Previous studies have shown that examination of all non-SLN with immunohistochemistry does not give additional information and is very costly and time consuming.

Results

A summary of results is present in **Table 1**. Twenty-four patients underwent sentinel node mapping. All except three patients had both techniques used. Early in the study two patients refused injection of the radio tracer and one patient did not receive the blue dye. In 21 patients both methods were used. Twenty-one had invasive ductal carcinoma and three had invasive lobular carcinoma. Eight were treated with modified radical mastectomy and 16 with breast conservation (i.e., lumpectomy, axillary lymph node dissection, and irradiation). Blue dye identified SLN in 18 (78%) of the 23 patients in whom it was used. Even though preoperative lymphocintigraphy identified a SLN in only 9 of 22 patients (41%), intraoperatively the GDP identified the SLN in 17 patients (77%). Overall, 23 of the 24 patients had a SLN identified (96%). In the patient who did not have a sentinel node identified, the axillary lymph nodes were negative for metastasis.

Ten patients had metastatic disease in axilla (42%). Forty-seven SLN were removed and 13 had metastatic disease. A total of 326 non-SLN were removed and only 7 instances of metastatic disease were seen in 4 patients (17%). The four patients who had positive non-SLN also have positive SLN.

TABLE 1. Summary of the results

Number of patients	24
Successful detection	23/24 (96%)
Gamma probe (+)	17/22 (77%)
Blue Dye (+)	18/23 (78%)
Lymphoscintigraphy (+)	9/22 (41%)
Number of sentinel nodes	47
Patients SLN positive	10/24 (42%)
Patients with metastasis in axilla	10/24 (42%)
Total SLN positive	13/47 (28%)
Patients with -ve SLN & +ve non SLN	0/24 (0%)
Number of non-SLN	326
Patients with +ve non-SLN	4/24 (17%)
Patients with only SLN +ve	6/10 (60%)
Occult metastasis (Cytokeratin)	1/18 (6%)
Sensitivity	100%
Specificity	100%
Positive predictive value	100%
Negative predictive value	100%

In 6 of the 10 patients with axillary node involvement, the sentinel node was the only positive node (60%). No patient had a positive non-SLN with a negative SLN. Thus, there were no false negative findings. The technique was 100% predictive of the axillary status. Inmunostaining with cytokeratin was done in 18 patients, in whom the initial hematoxylin-eosin staining was negative. In one patient (6%) it lead to the identification of metastatic disease not identified by routine H&E.

Discussion

The potential benefits of performing sentinel node mapping are many. It will limit the performance of axillary lymph node dissection to approximately one-third of patients with breast cancer, thus limiting the morbidity to patients with metastatic disease to the axilla. It allows the pathologist to examine one to three nodes that are more likely to contain the metastasis and concentrate on SLN by doing multiple sectioning, and IHC for cytokeratin. It would be expensive and time consuming to do this to every lymph node found in the axilla. This meticulous assessment increases the sensitivity of detecting micrometastasis. Also, cancer is upstaged when compared to traditional histopathological assessment, thus affecting patient management and prognosis.

The gold standard of staging in patients with breast cancer is still ALND; however, this is achieved with significant morbidity, an acute complication rate of 20% to 30%, and an incidence of chronic lymph edema as high as 30%.[10,11] Since there are not adequate noninvasive techniques for adequate lymph node staging, SLN mapping has emerged as a very promising technique. The first question is whether the status of the SLN predicts the status of the axilla. Several studies have demonstrated that it is possible to achieve adequately successful rates in harvesting SLN. The incidence of identification of SLN has varied from 65 % to 97% (**Table 2**). It appears that both techniques, radio tracer and vital blue dye, complement each other. In our experience it increased the success rate to 96% from 77% and 78%, respectively, when using either the dye or the radio tracer alone. Early in the series, one patient in whom the SLN was not identified

TABLE 2: Sentinel node mapping in breast cancer

Investigator	Total number	Phase status	Lymphatic mapping technique	Success rate (%)	False negative SLN (%)
Krag et al '93 [8]	22	I	P	81.8	0
Giuliano et al '94 [5]	174	I	B	65.5	4.4
Schneebaum et al '96 [13]	15	I	B/P	86.7	7.7
Neiweg et al '96 [15]	27	I	B	88.9	0
Meijer et al '96 [16]	30	I	P	93.3	0
Albertini et al '96 [17]	62	I	B	91.9	0
Giuliano et al '97 [6]	107	I	B	93.5	0
Veronesi et al '97 [18]	160	I	P	97.5	2.5
Cox et al '97 [19]	466	I/II	B/P	94.4	0.21
Sardi et al '99 (present series)	24	I	B/P	96	0

received both blue dye and the radio tracer injection. In this patient all axillary lymph nodes were negative for metastasis. In patients in whom a SLN is not identified, a complete ALND should be performed.

The incidence of occult micrometastasis (i.e., tumor not seen initially by routine histopathology but identify initially by IHC to cytokeratin) has been found in 9% to 29% of patients.[12] In our experience it was 6%. This upstaging of disease will lead to increased use of adjuvant therapy with consequent benefit to the patient. It has been shown that even patients with occult micrometastasis have a decrease in disease-free survival, when compared with patients who have negative nodes.[12] If the sentinel node is free from micrometastasis by H&E and IHC staining, the probability of non-sentinel node detection positive for tumor cells is < 0.1%.[13] Polymerase chain reaction (PCR) is now being used in order to try to improve the detection rate even further.

Using the SLN technique, some important issues are starting to emerge. Patients with ductal carcinoma *in situ*, in whom we would usually not perform an ALND, (because the incidence of metastasis has been less than 2%) have been shown to have SLN involvement in up to 8.6%.[14] Thus, the detection of SLN would change prognosis and management in this group of patients.

Furthermore, in some patients, the preoperative lymphoscintigraphy can identify a SLN in the internal mammary chain. A question arises of whether we should go back to biopsy these nodes. These issues need to be resolved.

There are some technical considerations when performing SLN mapping in the breast when compared to cutaneous melanoma. The major difficulty is the close proximity of the injected primary site to the axilla. A high background decreases the sensitivity of preoperative lymphoscintigraphy. In our experience, preoperative lymphoscintigraphy visualized a SLN in only 41% of patients, even though the radio tracer allowed the intraoperative detection of the SLN by the GDP in 77% of the patients. This has also been the experience of other investigators. Excision of the primary site will decrease this background (i.e., shine through effect) and help with the identification of the SLN.

It has also been found that a larger dose is required than that used in cutaneous melanoma. One ml versus 4 ml to 6 ml for the melanoma and breast, respectively. This is a reflection of the complex lymphatic network found in skin when compared with breast tissue.

The technique in patients with breast cancer is more difficult to learn than that in melanoma. Quality control is paramount for the successful application of this technique. Any breast surgeon considering this technique needs to do complete axillary dissection until it is demonstrated in his or her own hands that the success of identification of SLN is above 90%. More importantly, the predictability rate of the SLN harvested in relation to the rest of the axilla must be close to 100%. The cases needed for each surgeon to master the technique will depend on each surgeon's experience, but should be somewhere between 20 and 50 cases.

It is important to mention that SLN mapping is a low-cost procedure, carries minimal morbidity, and can be performed as an outpatient procedure at the time of the initial lumpectomy. This technique will allow two-thirds of the patients with breast cancer to be managed without ALND, with reduction in morbidity and cost. It will allow patients to return to their regular lifestyles sooner than with the present techniques. Based on a predictability of 100% in our experience, we are now offering to the patients with breast cancer the option of SLN mapping without an ALND. Only patients with positive SLN are now required to have ALND.

Although many issues need to be resolved, SLN mapping is changing the way we stage breast cancer.

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Commentary

By Amalia Seiguer, MMJ Editorial Board member

This report is similar to a number of others on breast cancer patients that support the premise, derived from melanoma studies, that the pathological status of the axillary sentinel node accurately predicts that of the non-sentinel nodes. Previous studies based on larger numbers of patients have found false negative rates (positive non-sentinel nodes with negative sentinel node) close to 5%[1] while the rate is 0% for the present series. One wonders whether the small sample size and/or the dissimilar methodologic handling of the non-sentinel lymph nodes versus the sentinel node, accounts for the difference. Strict adherence to accepted histopathologic study designs whereby all tissues are equally processed, may be needed before the validity of this promising axillary lymph node evaluation technique is conclusively proven.

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Maryland's high cancer mortality rate: a review of contributing demographic factors

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ABSTRACT: *For many years, Maryland has ranked among the top states in cancer mortality. This study analyzed mortality data from the National Center for Health Statistics (CDC-Wonder) to help explain Maryland's cancer rate and rank. Age-adjusted rates are based on deaths per 100,000 population from 1991 through 1995. Rates and ranks overall, and stratified by age, are calculated for total cancer mortality, as well as for four major sites: lung, breast, prostate, and colorectal. Because states differ in their racial/gender mix, race/gender rates among states are also compared. Although Maryland ranks seventh in overall cancer mortality, its rates and rank by race and gender subpopulation are less high. For those under 75, white men ranked 26th, black men ranked 20th, and black and white women ranked 12th and 10th, respectively. Maryland's overall rank, as with any state, is a function of the rates of its racial and gender subpopulations and the relative size of these groups in the state. Many of the disparities between Maryland's overall high cancer rank and its lower rank by subpopulation also characterize the major cancer sites. Although a stratified presentation of cancer rates and ranks may be more favorable to Maryland, it should not be used to downplay the attention cancer mortality in Maryland deserves.*

For many years, Maryland has ranked among the top states in cancer mortality. Many residents undoubtedly fear that merely living in Maryland carries an elevated cancer risk. This study analyzed mortality data to help explain Maryland's cancer rate and rank. We do not assess environmental or other exposures that may contribute to cancer in Maryland, but rather examine how certain demographic factors may affect Maryland's rate and rank.

Methods

The study uses mortality and population data supplied by the National Center for Health Statistics through CDC-Wonder. Rates are based on deaths of Maryland residents per 100,000 population from 1991 through 1995, and age-adjusted to the U.S. population in 1970. The study considers overall cancer mortality, as well as four major cancer sites: lung, breast, prostate, and colorectal.

Rates and ranks are calculated for the entire Maryland population, as well as for those under 75 years of age, and those 75 years and older. The analysis was stratified at age 75 because error rates concerning the cause of death are greater overall in the elderly.[1,2]

Rates and ranks also are calculated by racial/gender subpopulations, that is, by African-American women, white women, African-American men, and white men. Maryland's rank, as with any state, is a function of the rates of its racial and gender subpopulations and the relative size of these groups in the state. In the United States, mortality rates for many cancers are higher in the African-American population.[3] These disparities may reflect biology, behavior, exposures, or the use and availability of health care.[4] Because state populations differ in racial/gender mix, a composite rank may be misleading. A high rank could be due to a larger proportion of race/gender subgroups at high risk, with no actual difference in race/gender rates. Arguably a more accurate basis for comparing a state's cancer mortality experience requires either a weighted average of the state's subpopulation mortality rates or a review of each subpopulation's rate compared against the same group's rate in other states.

Subgroup comparisons were performed. All states, as well as the District of Columbia, were included when we calculated ranks for white populations by state. For

TABLE 1. Maryland and U.S. age-adjusted total[1] cancer mortality rates[2] (1991-1995) and Maryland national rank by race and gender subpopulations

	All ages		Ages <75		Ages 75+	
Total Population	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	185.8	7	130.7	11	1605.0	5
U.S.	171.4		122.0		1439.8	
State range[4]	125.8-216.6		86.3-162.5		1144.4-1672.8	
Black Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	181.5	11	135.4	12-13	1370.5	5
U.S.	168.6		128.5		1197.0	
State range[5]	83.7-220.7		74.5-159.9		837.8-1778.9	
White Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	149.7	8	107.8	10	1223.8	7
U.S.	140.6		102.6		1113.8	
State range[4]	107.9-158.6		77.9-117.5		883.0-1342.0	
Black Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	325.7	11	221.5	20	3003.1	5
U.S.	307.9		217.2		2634.6	
State range[5]	192.7-367.9		122.3-261.5		1350.2-3361.7	
White Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	217.0	21	139.3	26	2211.2	4
U.S.	209.4		138.7		2027.8	
State range[4]	151.2-245.9		96.0-168.9		1566.1-2315.3	

[1] *Includes ICD-9 codes 140.0-208.9. Does not include benign neoplasms, carcinoma in situ, neoplasms of uncertain behavior or neoplasms of unspecified nature.*
[2] *Rates are per 100,000.*
[3] *Rank among Black Americans includes 41 states and excludes states that have populations that are less than one percent African American: Maine, New Hampshire, Vermont, North Dakota, South Dakota, Montana, Idaho, Wyoming, and Utah. Rank specifies multiple positions where one or more states had rates identical to Maryland's.*
[4] *State range identifies the lowest and highest state mortality rates, but does not include any state with five or fewer deaths.*
[5] *State range identifies the lowest and highest state mortality rates, but does not include states identified in footnote 3, as well as any state with five or fewer deaths.*

African-American populations, however, the states of Maine, New Hampshire, Vermont, North Dakota, South Dakota, Montana, Idaho, Wyoming, and Utah were excluded because they have populations that are less than one percent African-American.[5] Rates and ranks are not calculated for populations that are neither white nor African-American.

TABLE 2. Maryland and U.S. age-adjusted lung and bronchus[1] cancer mortality rates[2] (1991-1995) and Maryland national rank by race and gender subpopulations

	All ages		Ages <75		Ages 75+	
Total Population	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	53.6	16-17	41.1	20	373.6	8
U.S.	49.8		38.7		334.7	
State range[4]	22.0-67.9		16.6-54.9		159.2-447.3	
Black Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	37.7	15-16	30.3	20	233.1	10
U.S.	32.9		27.2		175.4	
State range[5]	23.0-57.3		19.1-46.3		116.5-448.9	
White Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	38.8	7	31.0	6	252.2	4
U.S.	33.9		27.0		214.4	
State range[4]	14.1-47.6		11.1-37.1		88.9-347.9	
Black Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	102.0	20	79.0	23	692.8	15
U.S.	100.4		79.3		645.5	
State range[5]	52.3-138.4		42.3-115.6		309.6-1625.6	
White Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	71.0	23	50.4	26	598.7	16
U.S.	70.3		51.4		552.8	
State range[4]	31.2-102.3		22.4-77.3		260.2-745.4	

[1] *Includes ICD-9 codes 162.2-162.9*
[2] *Rates are per 100,000.*
[3] *Rank among Black Americans includes 41 states and excludes states that have populations that are less than one percent African-American: Maine, New Hampshire, Vermont, North Dakota, South Dakota, Montana, Idaho, Wyoming, and Utah. Rank specifies multiple positions where one or more states had rates identical to Maryland's.*
[4] *State range identifies the lowest and highest state mortality rates, but does not include any state with five or fewer deaths.*
[5] *State range identifies the lowest and highest state mortality rates, but does not include states identified in footnote 3, as well as any state with five or fewer deaths.*

Results

In the years analyzed, 1991 to 1995, Maryland ranked seventh in overall cancer mortality rates, with an average age-adjusted rate of 185.8 compared to 171.4 in the United States. The average age-adjusted cancer mortality rates of African-American and white, women and men in Maryland compared to these groups in other states for all-site cancers (ICD-9: 140.0-208.9) are shown in **Table 1**. The rates range from a low of 149.7 among white women to a high of 325.7 among black men, with intermediate rates among black women, 181.5, and white men, 217.0.

For all cancer sites combined, the four race/gender subpopulations in Maryland ranked more favorably than the Maryland population as a whole, with white men ranking 21st among white men in other states, black women and men, 11th, and white women, 8th. Thus, Maryland's rank overall (7th) appears to reflect the rank of white women and the larger percentage of African-Americans in Maryland (25% compared to 12% nationwide[5]), who generally have higher cancer mortality rates.

Stratification by age (under 75 years and 75 and over) revealed further discrepancies with the composite Maryland rank (Table 1). For each gender/race subpopulation under 75 years, the state rank is more favorable than for the 75 and over groups. For those under age 75, white men in Maryland rank 26th and black men rank 20th, while those over age 75 are 4th and 5th, respectively. Black and white women rank 12th and 10th, respectively, while those above age 75 are 5th and 7th.

The rates and ranks of Maryland for mortality due to lung and bronchus cancer (ICD-9: 162.2-162.9.) are presented in **Table 2**. Whereas Maryland's overall rank is about 16th, its rank varies between 23rd among white men and seventh among white women. Black women and men fall closer to the state's overall rank, at about 15th and 20th, respectively. Ranks among those under 75 years, with the exception of white women, fall between 20th and 26th.

Breast cancer mortality rates and rank in Maryland are presented in **Table 3**. Unlike previous analyses, this tables presents rates and ranks for women under 55 years, and for women 55 through 74, a crude stratification to reflect menopausal status. Here again black rates are

higher than whites, though ranks are fairly comparable among groups under 75 years. Notably, white women under 55 years rank about 27th, with rates lower than the national rates for white women in this age range. In this analysis, ranks were less favorable, not only in the oldest age range (75+), but in the younger post-menopausal (55 to 74) group as well.

Prostate cancer mortality is presented in **Table 4**, with Maryland ranking 7th overall, but as high as about 13th among white men. In the younger age group (i.e.,< 75 years), while rates varied greatly between the two racial groups, both group rates fell below U.S. rates, with white men ranking as low as 41st among white men generally. Again ranks rose in the older age group.

TABLE 3. Maryland and U.S. age-adjusted breast[1] cancer mortality rates[2] (1991-1995) and Maryland national rank by race

	All ages		Ages <55		Ages 55- 74		Ages 75+	
All Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	27.7	10	8.9	16-19	92.6	10	167.0	14
U.S.	26.0		8.7		85.9		154.3	
State range[4]	17.4-33.3		5.8-12.7		57.4-107.2		103.3-187.2	
Black Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	33.6	9	12.9	17-18	104.3	14	191.0	3
U.S.	31.3		12.8		99.2		157.3	
State range[5]	22.2-40.2		6.3-17.6		63.2-163.4		93.9-213.9	
White Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	26.4	10	7.9	27-31	90.8	10	164.2	14
U.S.	25.8		8.1		86.5		156.6	
State range[4]	19.8-29.5		4.7-9.1		66.6-100.1		114.6-197.2	

[1] *Includes ICD-9 codes 174.0-174.9.*
[2] *Rates are per 100,000.*
[3] *Rank among Black Americans includes 41 states and excludes states that have populations that are less than one percent African-American: Maine, New Hampshire, Vermont, North Dakota, South Dakota, Montana, Idaho, Wyoming, and Utah. Rank specifies multiple positions where one or more states had rates identical to Maryland's.*
[4] *State range identifies the lowest and highest state mortality rates, but does not include any state with five or fewer deaths.*
[5] *State range identifies the lowest and highest state mortality rates, but does not include states identified in footnote 3, as well as any state with five or fewer deaths.*

TABLE 4. Maryland and U.S. age-adjusted prostate[1] cancer mortality rates[2] (1991-1995) and Maryland national rank by race

	All ages		Ages <75		Ages 75+	
All Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	30.3	7	11.1	11	523.2	6
U.S.	26.1		9.9		440.7	
State range[4]	17.8-44.6		5.9-20.2		321.1-676.4	
Black Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	59.0	10	23.8	18-19	960.2	5
U.S.	54.8		24.0		846.4	
State range[5]	32.2-71.4		15.7-29.6		456.1-1109.1	
White Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	25.3	13-15	8.5	41-42	452.0	13
U.S.	24.0		8.8		413.7	
State range[4]	21.2-29.8		5.5-11.2		363.3-547.2	

[1] *Includes ICD-9 code 185.*
[2] *Rates are per 100,000.*
[3] *Rank among Black Americans includes 41 states and excludes states that have populations that are less than one percent African-American: Maine, New Hampshire, Vermont, North Dakota, South Dakota, Montana, Idaho, Wyoming, and Utah. Rank specifies multiple positions where one or more states had rates identical to Maryland's.*
[4] *State range identifies the lowest and highest state mortality rates, but does not include any state with five or fewer deaths.*
[5] *State range identifies the lowest and highest state mortality rates, but does not include states identified in footnote 3, as well as any state with five or fewer deaths.*

Finally, in **Table 5**, cancer mortality rates for colorectal cancers are presented. Here, Maryland's overall rank is high, at third, and the subpopulations also rank high, between about fifth and eleventh. Even among those under 75 years, the Maryland's rankings are relatively poor.

In general, the oldest age group in Maryland is characterized by high morality ranks among states, whereas those under 75 years have markedly lower ranks among states. This is puzzling. Differences in mortality rates may reflect differences in environmental or behavioral factors, variant cohort effects, discrepancies in medical care, differences in death certificate recording practices, or some combination of these. Without resolving the issue, we note, as indicated earlier, that errors in death certificate reports are likely to be greatest among the oldest segments of the population. Thus, while it is possible that the poor ranking of the oldest population in Maryland reflects a different risk-experience of its oldest population, there is likely to be greater reliability to the ranking of Maryland's younger population.

TABLE 5. Maryland and U.S. age-adjusted colorectal[1] cancer mortality rates[2] (1991-1995) and Maryland national rank by race and gender subpopulations

	All ages		Ages <75		Ages 75+	
Total Population	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	20.4	3	12.7	3-4	216.3	3
U.S.	17.6		11.0		187.4	
State range[4]	13.4-21.4		8.1-14.2		141.4-228.3	
Black Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	22.2	5-6	14.7	7	214.8	8
U.S.	19.7		12.9		195.0	
State range[5]	10.5-26.0		5.7-19.1		90.6-285.2	
White Women	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	16.1	6-9	9.5	10	186.4	5
U.S.	14.5		8.5		162.9	
State range[4]	9.5-17.0		3.2-10.3		121.2-198.5	
Black Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	30.5	11-12	19.1	15-16	323.6	9
U.S.	27.5		18.1		267.9	
State range[5]	15.3-39.8		11.5-26.7		110.5-441.6	
White Men	**Rates**	**Rank[3]**	**Rates**	**Rank**	**Rates**	**Rank**
Maryland	23.9	7	14.7	6	260.0	8
U.S.	21.2		13.0		232.2	
State range[4]	16.6-26.0		8.0-15.7		173.3-295.7	

[1] *Includes ICD-9 codes 153.0-154.1.*
[2] *Rates are per 100,000.*
[3] *Rank among Black Americans includes 41 states and excludes states that have populations that are less than one percent African-American: Maine, New Hampshire, Vermont, North Dakota, South Dakota, Montana, Idaho, Wyoming, and Utah. Rank specifies multiple positions where one or more states had rates identical to Maryland's.*
[4] *State range identifies the lowest and highest state mortality rates, but does not include any state with five or fewer deaths.*
[5] *State range identifies the lowest and highest state mortality rates, but does not include states identified in footnote 3, as well as any state with five or fewer deaths.*

Conclusion

Maryland's overall cancer mortality rank among states is high, that is, seventh. But if one presents Maryland's cancer mortality rate and rank by race and gender subpopulation among those under 75 years of age, Maryland's position relative to that of other states is less high. While there are some deviations, many of the same disparities between Maryland's overall high cancer rank and its lower rank by gender/race and younger age subpopulation generally characterize the major cancer sites: lung, breast, prostate, and colorectal.

This perspective, however, should not be used to downplay the attention cancer mortality in Maryland deserves, nor the risks facing residents of Maryland and those of other states. Maryland's cancer mortality rates, like that of many other states, remain far above those of some states, such as Utah, which has an overall cancer rate about 30% less than comparable subpopulations in Maryland. Moreover, the fact that Maryland's overall rates reflect in part the higher rates of its African-American population underscores the disproportionate cancer burden confronting America's African-American population and the need to rectify that disparity. In addition, that Maryland's colorectal cancer rank remains high, even among the various subpopulations, highlights the importance of this site as a cause of death in Maryland.

A stratified presentation of Maryland's cancer mortality rankings may be more favorable, and fair, to Maryland than the composite high rank routinely attributed to it. Although less alarming, the rankings shown here provide no basis for complacency.

Acknowledgments

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Fat embolism syndrome in a case of abdominal lipectomy with liposuction

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ABSTRACT: *Fat embolism syndrome is reported in a patient who underwent abdominoplasty and suction lipectomy for body contouring. Within 48 hours after surgery, she experienced adult respiratory distress syndrome, secondary to fat embolism syndrome. This was proven on bronchoscopy by evidence of fat laden macrophages. Aggressive respiratory support over 12 days resulted in patient survival.*

Fat embolism syndrome (FES) may vary from a subclinical state to fulminant respiratory failure. It is the most frequent cause of death secondary to skeletal injuries.[1] Few articles in the medical literature address FES in patients seeking elective liposuction for body contouring. We report a case of FES after abdominal lipectomy with liposuction.

Case report

A 54-year-old woman presented to the emergency room because of progressive respiratory symptoms two days after having an abdominal lipectomy with liposuction. On admission, the patient had shortness of breath (SOB) and dyspnea on exertion (DOE). The patient had undergone an abdominal lipectomy with liposuction and was discharged to home fully recovered from anesthesia with normal vital signs and oxygen saturation. She claimed that approximately 12 hours after her surgery she experienced SOB and DOE. The symptoms persisted and

progressed. Two days after surgery she called 911 and was rushed to the emergency department via ambulance. Her pO2 on 100% oxygen was 90 torr (normal 500 torr) and her pCO2 was 50 torr (normal 35 to 45 torr).[2] She tired on the exertion of breathing. Her chest x-ray showed bilateral fluffy infiltrates and her ventilation perfusion scan was interpreted as low likelihood of pulmonary thromboembolism. She was intubated and placed on a respirator. Heparin was begun initially because of clinical symptomatology, but was quickly discontinued when she had progressive bleeding from her abdominal wound. Bronchoscopy and bronchoalveolar lavage revealed fat laden macrophages. A diagnosis of adult respiratory distress syndrome (RDS) secondary to FES was established. Treatment over the next week was symptomatic, utilizing oxygen, intubation, ventilation, and steroids. Her chest x-ray improved dramatically over the next several days. She was successfully extubated and was discharged after 12 days of treatment. Diagnosis was fulminant adult respiratory distress syndrome secondary to FES.

Discussion

Since the advent of liposuction, body contouring has become the most common esthetic surgical procedure.[3] National surveys by Teimourian et al, in 1988, and Dillerud in 1990, indicate that suction lipectomy has a low complication rate and is a reasonably safe procedure.[4,5] Teimourian's survey did reveal 15 reported deaths. Fat embolism was causative in one case. In 1990, Boezart et al, reported on a nonlethal case of adult respiratory distress syndrome(RDS) secondary to FES after liposuction. The patient required eight days of hospitalization.[6]

While adult RDS secondary to FES may be an infrequently reported complication of liposuction and/or lipectomy, it can be fatal.[4] This is a very disconcerting complication for a patient seeking an elective procedure.

Most information concerning the pathogenesis of pulmonary fat embolization can be obtained from the literature on shock trauma and long bone fractures. The course of events in FES begins with disruption of body fat that appears in the circulatory blood, not in emulsion, but in droplets large enough to occlude capillaries and arteries. Symptoms are reported to appear in 12 to 24 hours in trauma patients.[1] The lung acts as a filter of the fat. The lung parenchyma produces a lipase to remove the fat emboli. Hydrolysis of the triglycerides to glycerol and fatty acids occurs leading to a chemical pneumonitis.[7] There is a decrease in surfactant that can further diminish pulmonary function and intensify the pulmonary hypoxia. Depending on preoperative pulmonary functions and the body's ability to respond to the chemical pneumonitis, one will see a continuum of subclinical hypoxia, to full blown adult RDS and death.

The case presented depicts fulminant FES. On preoperative history the patient denied smoking, yet she was a heavy smoker. Fat embolization with a chemical pneumonitis further compromised an already compromised respiratory system. She developed full blown RDS and was diagnosed as FES from her clinical symptomatology and the appearance of fat laden macrophages in the lung, a significant finding in FES.[8]

The treatment of fat embolism syndrome begins with prevention. The amount of tissue manipulation along with hypovolemia or hypoperfusion are thought to be factors that predispose to FES.[1] The patient should be adequately hydrated at all times during surgery. Preoperative pulmonary preparation (i.e., smoking cessation, blow bottles, and pulmonary toilet) may be indicated in patients who have histories of heavy smoking and pulmonary pathology. The surgeon must be ever suspicious and vigilant for early signs of FES. The postoperative mental confusion and amnesia as reported in the literature following suction lipectomy and body contouring may indeed be evidence of hypoxia.[1,5,6,8,9] Once the diagnosis of FES is suspected or established, the treatment is supportive. It has been speculated that steroids may abort the chemical pneumonitis, the initial presentation of FES, that ultimately results in hypoxia. Steroids, heparin, and IV alcohol have been used to prevent and treat FES, but are controversial. Supportive treatment ultimately revolves around reversing the hypoxic state.

Summary

A case of FES following abdominoplasty with suction lipectomy is reported. Aggressive and supportive treatment of the respiratory failure resulted in patient survival.

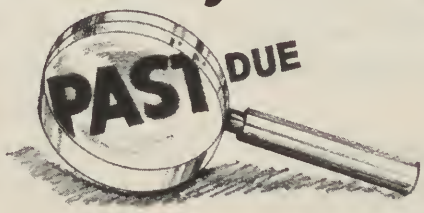
Acknowledgment

Jonathan David Solomon, B.S., medical student, Temple University School of Medicine; Sara K. Hawes, B.A., medical student, Ross University School of Medicine; Matthew Aaron Solomon, medical student, Lake Erie College of Osteopathic Medicine

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Effect of a disease management tool on residents' compliance with American Diabetes Association standard of care for Type 2 diabetes mellitus

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ABSTRACT: *Diabetes mellitus is the fourth leading cause of death in the United States and a major cause of blindness and heart disease. Often, physicians do not comply with American Diabetes Association standards of practice.*

We report improved resident physicians' compliance with American Diabetes Association (ADA) standards of care for patients with Type 2 diabetes mellitus after the implementation of a disease management tool for diabetes mellitus.

Diabetes is the fourth leading cause of death by diseases in the United States. It is the major cause of blindness in persons 24 to 74 years of age, with 39,000 new cases each year. Ten percent of patients with diabetes develop renal disease, and in 1990, 13,000 new cases of end-stage renal disease (ESRD) were a result of diabetes. Patients with diabetes have a 28-fold increased risk of lower limb amputation, and approximately 50% of people who have had diabetes for longer than 25 years have evidence of neuropathy. The presence of diabetes imposes a 2- to 4-fold lifetime risk of heart disease and a 5-fold lifetime risk of stroke.[1]

The American Diabetes Association (ADA) published standards of practice for comprehensive care of Type 2 diabetes mellitus (DM), including guidelines for optimizing glycemic control.[2] It is well documented that physicians and other health care providers often do not comply with the existing ADA guidelines. Disease specific interventions produce cost-effective use of resources and, at the same time, improve the overall quality of care delivered.[3]

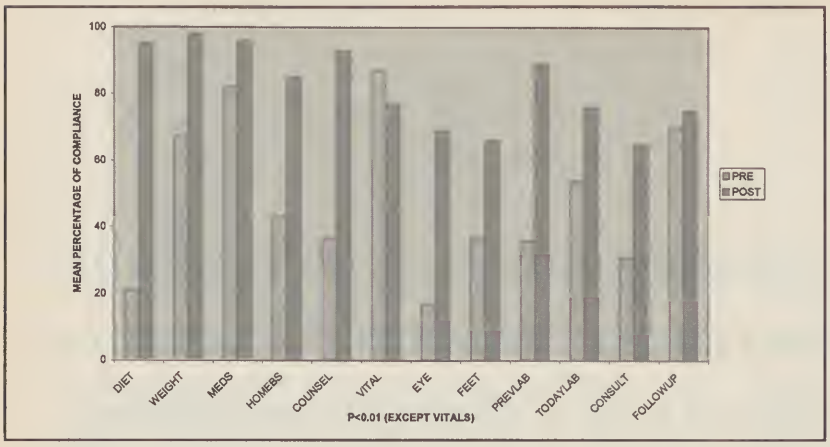


FIGURE 1. Compliance to standard: Pre- and post-disease management tool.

We studied the use of a disease management tool that has the potential of improving compliance with standards of care for Type 2 DM.

Methods and results

We followed 41 patients with Type 2 DM in an internal medicine residency-training program for a three-year period between July 1994 and July 1997.

All patients with Type 2 DM were identified. A disease management tool was developed based on the 1995 ADA standards of practice. Twelve categories of care for Type 2 DM, known as visit scores, were created for each patient encounter. Each resident's performance was based on successful performance of each of the 12 visit categories of care used in the disease management tool.

A retrospective follow-up study design was used, with the retrospective and prospective arms each spanning an 18-month period. The retrospective arm was between July 1994 and December 1995, prior to the implementation of the disease management tool. Charts were reviewed to evaluate each resident's performance of the twelve categories of care. The prospective arm examined residents performance between January 1996 and July 1997, after implementation of the tool.

The Wilcoxon Signed Ranks Test was used to evaluate the ratio of compliant visits to total visits before the utilization of the disease management tool, compared to the same ratio after the use of this tool. A compliant visit was defined as a visit in which the resident addressed the specified category of care.

Visit scores improved significantly in 11 of 12 categories ($p<0.05$) with regular use of the disease management tool (Figure 1).

Discussion

Based on the results of our project, the introduction of a disease management tool improved residents' performance, as demonstrated by better compliance with existing standards of care for Type 2 DM. A study to determine compliance with

DIABETES VISIT PROGRESS NOTE

TODAY'S DATE: DATE OF NEXT APPOINTMENT:

PATIENT NAME: MR#:

PHYSICIAN: BEEPER #: SUPERVISING FACULTY:

1. DIET: ADA CALORIES ____ LOW FAT ____ SODIUM LOW/NORMAL ____
COMPLIANCE: ____ STRICT ____ OCCASIONALLY OFF ____ POOR ____
UNDERSTANDING OF DIET: ____ GOOD ____ FAIR ____ POOR ____

2. EXERCISE COUNSELING: TYPE OF EXERCISE ____
FREQUENCY: DAYS PER WEEK ____ MINUTES PER DAY ____

3. PSYCHOSOCIAL ISSUES: PROBLEMS GETTING DIABETIC SUPPLIES? ____
DEPRESSION: ANY SYMPTOMS ____ ON ANTIDEPRESSANTS ____
OTHER PSYCHIATRIC DIAGNOSIS ____

4. REVIEW OF HOME BLOOD GLUCOSE MONITORING:
UNDERSTANDS TECHNIQUE ____ TIMES/WEEK MEASURED ____
MEASURES FASTING ____ PREPRANDIAL ____ BEDTIME
HIGHEST HOME BLOOD GLUCOSE SINCE LAST VISIT ____ LOWEST VALUE ____
HYPOGLYCEMIC SYMPTOMS ____ FREQUENTLY ____ OCCASIONALLY ____ NEVER ____
WHAT IS USED FOR HYPOGLYCEMIC EPISODES ____

5. COMPLICATIONS/RISK FACTORS: DISCUSSED WITH PATIENT?
EYE DISEASE/BLINDNESS ____ KIDNEY DISEASE/ESRD ____
CARDIAC DISEASE/CAD/PVD ____ NEUROPATHY/ULCERATION/AMPUTATION ____
SEXUAL/URINARY DYSFUNCTION ____ TOBACCO ____ ALCOHOL ____
ILLICIT DRUG USE ____ OBESITY ____

6. VACCINATION/BOOSTERS:

	DATE LAST GIVEN	GIVEN TODAY	PATIENT REFUSED
PNEUMOCOCCAL			
INFLUENZA			
OTHER			

7. CONSULTS/SERVICES ORDERED:

	FREQUENCY	DATE LAST ORDERED	LAST CONSULT REVIEWED	ORDERED TODAY
DIABETES EDUCATOR	YEARLY			
DIETITIAN	YEARLY			
OPHTHALMOLOGIST	YEARLY			
PODIATRIST	YEARLY			
NEPHROLOGIST	AS NEEDED			
ENDOCRINE	AS NEEDED			
OTHER	AS NEEDED			

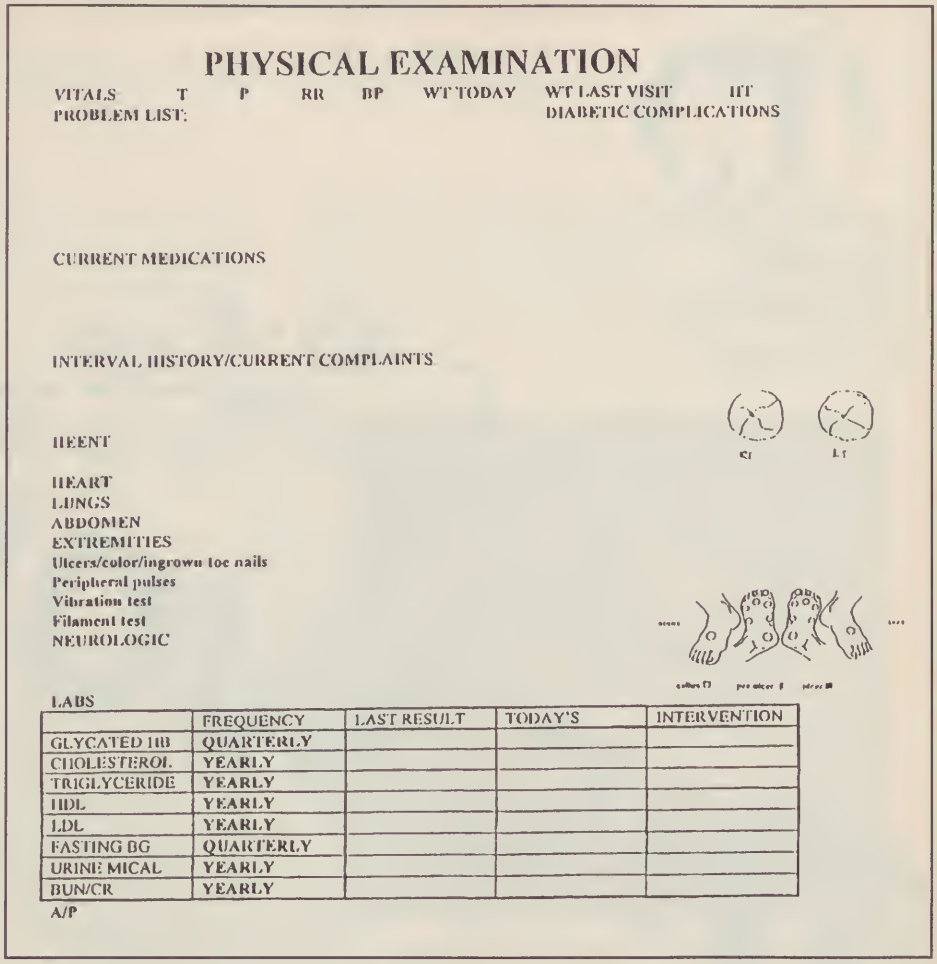
FIGURE 2a. Diabetes visit progress note

advanced cardiac life support (ACLS) guidelines among ACLS certified and non-ACLS certified physicians revealed that despite bi-annual ACLS training of all medical residents, non-compliance with ACLS guidelines was noticed in 35% of treatments.[4] Another study to examine physicians' adherence to practice guidelines for patients with Type 2 DM revealed that on average five out of eight aspects of the guidelines (62%) were performed appropriately, with the poorest compliance being for the annual proteinuria test.[5]

We believe that our project was highly successful in effecting a positive change in both the process and outcome of care for our diabetic patients. The disease management tool served several functions:

(1) As an educational tool to display the ADA guidelines in a clear and concise fashion;
(2) As an efficient data collection tool for uniform data entry of process and laboratory measures;
(3) As a model for future development of similar ambulatory-based disease management teaching and tracking systems;
(4) As a valuable learning experience for data organization, analysis and feedback; and
(5) As an important step for our practice in improving appropriate chart documentation practices required by payers and managed care contracts.

We recommend the use of the revised disease management tool (**Figures 2a, 2b**) in primary care settings.



PHYSICAL EXAMINATION

VITALS T P RR BP WT TODAY WT LAST VISIT HT
PROBLEM LIST: DIABETIC COMPLICATIONS

CURRENT MEDICATIONS

INTERVAL HISTORY/CURRENT COMPLAINTS

HEENT

HEART
LUNGS
ABDOMEN
EXTREMITIES
Ulcers/color/ingrown toe nails
Peripheral pulses
Vibration test
Filament test
NEUROLOGIC

LABS

	FREQUENCY	LAST RESULT	TODAY'S	INTERVENTION
GLYCATED HB	QUARTERLY			
CHOLESTEROL	YEARLY			
TRIGLYCERIDE	YEARLY			
HDL	YEARLY			
LDL	YEARLY			
FASTING BG	QUARTERLY			
URINE MICAL	YEARLY			
BUN/CR	YEARLY			

A/P

FIGURE 2b. Physical examination

Acknowledgment

We acknowledge the individual and collective contribution of the faculty and residents of the internal medicine residency program at GBMC towards the implementation of the disease management tool.

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Imaging Case of the Month

Clinical history

A 70-year-old man presented with a one-week history of crampy periumbilical abdominal pain, accompanied by abdominal distension and obstipation. He had episodic nausea and emesis over the last three days. His medical history was significant for hypertension and benign prostatic hypertrophy. On physical exam his abdomen was distended and diffusely tender to palpation. Laboratory analysis revealed a serum sodium of 150 mEq/L and a white blood cell count of 18,000/cu mm. The patient was referred for imaging.

Imaging findings

A supine abdominal film demonstrated several distended small bowel loops in the left abdomen and a 3cm calcified radiodensity projected over the left iliac crest (**Figure 1**). Computed tomography (CT) of the abdomen was then performed. CT through the upper abdomen depicted central low attenuation within non-dilated bile ducts compatible with pneumobilia. More inferiorly, a communication was visualized between the gallbladder and the second portion of the duodenum, representing a bilioenteric fistula. Oral contrast was observed passing freely into the gallbladder. In the left pelvis, a 3cm calcified gallstone was visualized within a loop of small bowel causing proximal obstruction (**Figure 2**). Sagittal view from an abdominal HASTE MRI (TE 95ms; TR 8.2ms) substantiates the small bowel obstruction and shows the gallstone as a low T2-signal intensity lesion in the pelvis (**Figure 3**).

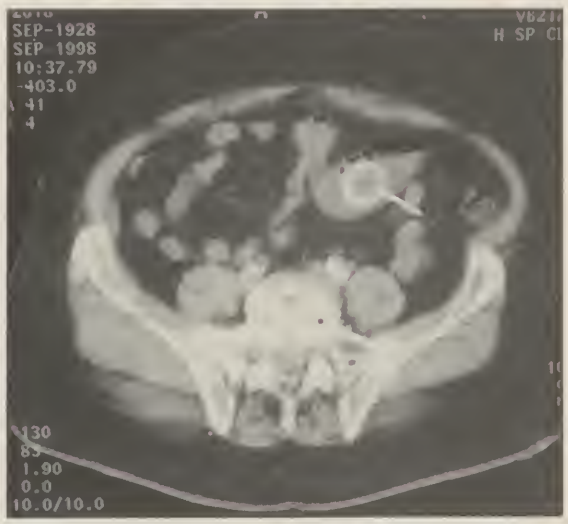


FIGURE 2. CT scan through the upper pelvis showing a large gallstone as the cause of the small bowel obstruction (white arrow).



FIGURE 1. Supine plain film of the abdomen depicts several dilated loops of small bowel in the left abdomen (open black arrows). A 3cm calcific radiodensity is projected over the left iliac crest (black arrow).



FIGURE 3. Sagittal HASTE MRI of the abdomen depicts proximal dilated small bowel loops (white arrow) and a low T2-signal intensity structure in the pelvis (black arrow), representing the large calcified gallstone.

Diagnosis

Gallstone ileus.

Discussion

Gallstone intestinal obstruction is an unusual disorder seen in less than 1% of patients with small intestinal obstruction and less than 0.5% of patients with biliary tract disease.[1] Overall, most small bowel obstructions are a result of adhesions from prior surgery, internal or external hernias, or benign and malignant small bowel neoplasms. Although rare in the general population, gallstone ileus accounts for 25% of nonstrangulated small bowel obstructions in patients over 65 years of age. The mortality of this condition remains high, up to 20% in some reports, because of the elderly patient population effected and their comorbid medical conditions.[1]

The physical presence of obstructing foreign bodies in the intestinal tract is an unusual occurrence, even taking into account patients who ingest foreign matter. Evaluation of feces in patients with cholelithiasis and choledocholithiasis suggests a relatively high frequency of stone passage. While the larger enteroliths that cause intestinal obstruction are most often gallstones, enterolithiasis may also be associated with jejunal diverticulosis, Meckel's diverticula, and intestinal tuberculosis. Calculi large enough to cause intestinal obstruction usually pass from the gallbladder or common duct to the intestinal tract by direct fistulous communication. These fistulous tracts are thought to occur in the elderly because of chronic inflammation associated with cholelithiasis. It is thought that 80% to 85% of obstructing stones pass via such fistulous communications to either the duodenum or hepatic flexure. Approximately 15% to 20% are thought to pass naturally through the ampulla, especially with a history of therapeutic sphincterotomy.[2] Although such calculi can become impacted anywhere in the intestinal tract, they usually impact in the second portion of the duodenum, distal ileum, or in the sigmoid colon. When impacted in the duodenum, the calculus causes gastric outlet obstruction and intractable vomiting, known as Bouveret's syndrome. Clinical experience suggests that such large stones, once impacted, rarely pass spontaneously.

Patients most often present with symptoms of small bowel obstruction alone. Surprisingly, less than 50% have previously had gallbladder disease diagnosed. Jaundice is also unusual in this patient population because of the presence of a cholecystoenteric fistula, which will divert bile into the intestine. The radiographic hallmarks of gallstone ileus include dilated small bowel loops, pneumobilia, and one or more discrete radiodensities within the abdomen representing ectopic gallstones.

Prompt diagnosis of this disorder is imperative in order to lessen subsequent morbidity and mortality.[3] Before the advent of CT scanning, missed or delayed diagnosis of this disease entity often led to delayed definitive treatment. Laboratory test results are generally nonspecific and may show evidence of dehydration and electrolyte imbalance. Plain abdominal radiographs will show evidence of bowel obstruction in 75% to 80%. Aberrantly located stones will be visualized on approximately 30% of plain radiographs, while pneumobilia will be seen in about half. Now with the use of abdominal CT, the sensitivity and specificity for diagnosing this disease has greatly increased. MRI is gaining acceptance for use in the evaluation of small bowel obstruction because of the ability of heavily T2-weighted sequences to image stagnant fluid in dilated aperistaltic bowel loops. Patients are now diagnosed earlier and the anatomic detail gained from imaging allows more specific preoperative planning.

Although endoscopic as well as extracorporeal lithotripsy techniques have been invoked for the treatment of this disorder, operative therapy remains the mainstay of treatment. A considerable surgical controversy has centered around the optimal surgical therapy in this aged patient population. Much of the literature has focused on the decreased morbidity and mortality associated with a more conservative approach. Proponents of minimal surgery feel that relief of the obstruction is all that is required. Others argue that the gallbladder and bilioenteric fistula must be removed at the time of enterolithotomy to prevent future recurrence, the so-called one-stage procedure. Most authors conclude that the procedure preferred in stabilized patients is a one-stage operation, whereas in debilitated patients only relief of the obstruction should be sought.[4,5] A judicious use of surgical therapy, as well as improved clinical detection and diagnostic imaging, should continue to reduce the morbidity and mortality associated with this relatively rare entity.

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The Paper Chase

As in any business, the ultimate financial goal of a medical practice is to maximize profits while maintaining a high quality of care and service to the patient. In pursuit of these goals efficient use of time and materials by office staff become key elements. The following observational study was conducted to illustrate the time and expense exhausted by the conventional paper flow through a medical office.

A suburban Maryland pediatric practice was used as a test site. This practice had a total of 34,384 patient encounters in 1994. Measures were taken during three weeks over the course of the year and were expanded to represent the year as a whole. Each observed week was randomly selected from one of three seasonal periods: spring/fall, winter, and summer. Spring and fall are statistically similar in patient visits and office activity in the pediatric office. Therefore, only one week of observation was used for this seasonal demarcation. The variables assessed were the number of times the patients' medical records were accessed, the time it took to file the paperwork into patient charts, the time it took to re-file the medical record, and the time spent on the transfer of medical records out of the practice.

First, the number of times a medical record was retrieved and the time taken to do so was recorded.

TABLE 1. In a pediatric practice that has 34,384 patient visits a year, the medical record needs to be accessed about 58,000 other times. In order of frequency are the additional reasons the chart was pulled:

• medical visits	34,384
• medical messages	24,668
• medical correspondence	15,672
• filing lab results	4,194
• billing questions	2,860
• requests for RX refills	2,319
• requests for IMM record	2,263
• completing school forms	2,042
• referral requests	1,380
• filing tine tests	1,159
• transferring records	852
• filing records from previous doctors	607
Total	**92,400**

TABLE 2. Bulk pulling of charts

number of charts	time spent	average per chart
17	5 min, 3 sec	17.8 seconds
15	5 min, 50 sec	23.3 seconds
9	4 min, 3 sec	16.2 seconds
21	5 min, 32 sec	15.8 seconds
14	5 min, 48 sec	20.8 seconds

• *average time spent pulling a chart = 20 seconds*

Based on the observations of this study, a total of 92,400 medical record retrievals took place over the year (**Table 1**). Retrieving the medical record is done either singly or in batches. Records can be gathered in batches because all charts on the doctors schedule can be pulled the night before. Because in the observed pediatric office 28% of visits are physical exams and 15% are follow-up visits scheduled in advance, 43% of all visits can be pulled using the batch method. The time needed to pull batched charts from the shelves averaged 20 seconds per record (**Table 2**). However, the record was not on the shelf in the medical records room 14.4% of the time. Therefore, batch retrieval could only take place 11,925 times for a total time involvement of 66 hours per year.

The remaining charts were accessed by single retrievals. This was necessary because the chart was missing from the records room during batch retrieval or because the patient was added to the schedule after the batch retrieval had occurred. A total of 13,315 medical records were not present on the shelf during the study year. These "missing" charts took an average of three minutes and 50 second to locate, totaling approximately 850 hours per year (**Table 3**). The remaining single retrievals totaled 67,160 records. These retrievals averaged 26.8 seconds each for a yearly total of 500 hours (**Table 4**). Therefore, taking all types of retrievals into account, the total time needed to make medical records available to doctors and staff was 1,416 hours for the year.

The next measure taken was the time expended on filing paperwork into the patients' medical records. Once the chart was in-hand, the filing of medical

TABLE 3. Time needed to locate 40 consecutive medical records that were not in the file room.

1.	:34	11.	:22	21.	:37	31.	7:26
2.	15:27*	12.	9:48*	22.	3:43	32.	1:15
3.	:14	13.	:37	23.	:37	33.	1:39
4.	4:07	14.	1:58	24.	:23	34.	:45
5.	:49	15.	:57	25.	:38	35.	5:08
6.	:42	16.	:56	26.	1:00	36.	:30
7.	6:26	17.	:45	27.	1:15	37.	8:53*
8.	:12	18.	:16	28.	:21	38.	:32
9.	38:37	19.	5:45	29.	12:00	39.	2:21
10.	1:09	20.	1:11	30.	8:14	40.	4:12

• *average time to locate chart - 3 minutes, 50 seconds*

**Charts still not located after initial search*

messages and patient visits took approximately 8 seconds per sheet. These sheets are paper-clipped with those sheets already inside the record by date order. The total 34,384 patient visits combined with 24,668 medical messages to create 59,052 sheets of filing, totaling 131 hours per year.

All other pieces of paper requiring placement in the medical record needed to be hole-punched and inserted onto metal fasteners in date order. This type of filing was necessary for 21,632 sheets of paper. Each sheet took approximately 1 minute and 24 seconds to place in the record, totaling 505 hours per year (**Table 5**).

Furthermore, after the file was retrieved and the paperwork was filed, the chart needed to be placed back on the shelf in the medical records room. Since re-filing can take place using a batch strategy, re-filing was generally efficient, taking approximately 14 seconds per chart, totaling 359 hours per year.

Finally, the single most time consuming task involving the medical record and the associated paperwork was preparing and photocopying the

TABLE 4. Retrieval of single charts

Time Spent on Retrieval
(Sample of 12 charts for averaging)

18 SEC	18 SEC	51 SEC
22 SEC	23 SEC	38 SEC
35 SEC	23 SEC	15 SEC
43 SEC	17 SEC	19 SEC

• *average time for retrieval of single charts = 26.8 sec*

• *67,160 single retrievals taking 26.8 seconds each = 500 hours*

TABLE 5. Time spent filing correspondence

10 pieces of correspondence *(e.g. , letters from specialists)* .....13 minutes, 43 seconds *(time includes pulling chart, filing paper, putting back on shelf)*

• *average time for one piece - 1.4 minutes*

record for patients who were transferring or for subspecialists. This occurred a total 852 times during the year. The process averaged 15 minutes per record, totaling 213 hours per year (**Table 6**).

During the year of study, the observed office staff spent a total of 2,624 hours manipulating paperwork and the medical record. Using the average hourly wage of medical records personnel and receptionists with benefits (i.e., $12/hour) the total cost of paper processing is $31,488 per year. This figure represents only the cost of staff time and does not include the cost of materials. In these financial terms it becomes clear that if a more efficient way was found to handle the massive volume of paper generated in a medical office profits would be increased. Furthermore, the time put forth by staff on "the paper chase" could be utilized in other business and service enhancing activities.

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Acknowledgment
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TABLE 6. Time spent for copying medical records for transfer
(Sample of 9 charts for averaging)

# of pages	time
21	18 min, 14 sec
24	19 min, 50 sec
13	10 min, 44 sec
26	16 min, 53 sec
27	15 min
10	9 min, 29 sec
13	15 min, 7 sec
18	12 min, 23 sec
32	16 min, 32 sec

Time includes pulling chart, reviewing the chart, pulling pages to be copied, copying, reassembling, preparing for mail, entering in transfer log, and putting chart back on shelf.

The health of merchant seamen in Baltimore and its history

Abstract

This article provides the history of health care provisions for seamen in Baltimore and presents an analysis of the distribution of diseases of merchant seamen in Baltimore in 1995.

Baltimore's shipping industry is essential to Maryland's economy. Every year, thousands of seamen from all over the world come to the port of Baltimore. Their health is an important public health issue for Maryland because of quarantine considerations and because shipping companies consider port health facilities an essential part of port services.

This article describes the history of health care provisions for seamen in Baltimore and presents the results of an analysis of the distribution of diseases of merchant seamen in Baltimore in 1995.

The history

Two different concepts of the health of merchant seamen always coexisted: first, the regulatory, preventive approach of quarantine to protect the population against epidemic diseases brought in through the port, and second, the curative approach with a Marine Hospital Service. Both functions were closely intertwined and sometimes difficult to separate. These approaches are integral to the history of the health care systems for seamen in Baltimore.

The 18th century

By the late 1700s, Baltimore had become an important and busy East Coast port. In 1796, an observer counted "109 full-rigged (clipper) ships, 162 brigs, 350 schooners and sloops, and 5,464 assorted Chesapeake Bay" craft coming into Baltimore's harbor.[1] In 1797, the city of Baltimore, with its rapidly growing population, experienced a severe yellow-fever epidemic. The outbreak began in Fell's Point and spread quickly across the city. The disease was commonly introduced by infected seamen either at the lazaretto, where ships first entered and were detained for quarantine, or at Fell's Point, where they unloaded after passing quarantine.[2] During these epidemics, people from the infected districts were usually evacuated to other parts of the city or to the countryside.

The first quarantine regulations required vessels to be detained at a lazaretto for 12 to 40 days. (The Italian word for 40 gave rise to the word quarantine.)[2] Baltimore's regulations in 1797 required a 10-day quarantine on ships and personnel arriving from overseas and "all other suspected places" only during the summer months (i.e., the yellow-fever season) and gave health authorities the power to restrict the landing of damaged goods from which yellow fever was believed to arise.[2]

The 19th century

In 1801, quarantine was imposed only on ships from the West Indies, Africa, South America, and the Mediterranean. The primary quarantine period was three days, with the possibility of a ten-day extension. Vessels from "yellow fever ports" were required to discharge cargoes and ballast at the quarantine station. The sick were sent to a hospital at Hawkin's Point.[2]

Around 1820, the health department was reorganized and the ordinances were changed. The importance of material was stressed less and emphasis was placed on examination of crew and personnel, which was made mandatory in 1826.[2] These changes were partly motivated by the rising number of immigrants arriving from Europe and the perceived threat of small-pox and typhus. All vessels were required to anchor at the quarantine-ground for passenger, crew, and cargo examinations. Vessels held for quarantine were sent to the lazaretto for cleaning and discharging of cargo and passengers.[2] Persons with yellow fever, cholera, small-pox, and typhus fever were retained. In the case of a small-pox diagnosis everyone on board was vaccinated and the ship was disinfected.

Annual reports from the quarantine officers have been preserved since 1827. In 1827, large ships totaled 546, of which 177 were coming from foreign ports carrying 1,429 passengers. In 1829, 4,600 passengers were inspected and for the period from 1827 to 1834 a total of over 44,000 passengers were examined by the health officer. These practices continued until 1847 when the quarantine process was organized by the United States' Marine Hospital Service. After 1880, it was renamed United States Health Service.[2] The Act for the Relief of Sick and Disabled Seamen, which has passed in 1798, had laid the foundations for a national system of hospital care for sailors. It

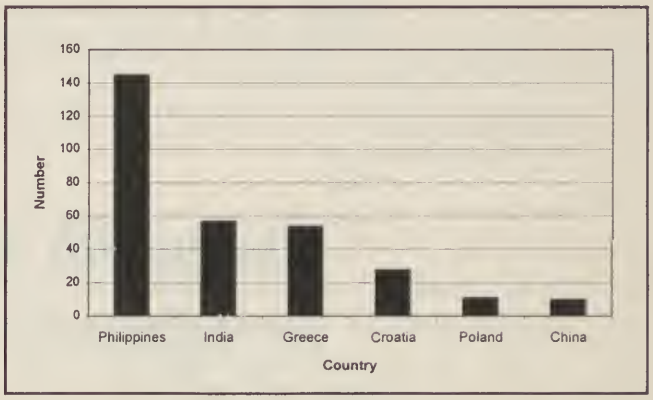


FIGURE 1. Number of cases

mandated an insurance system. The Marine Hospital Service would provide medical care for U.S. seamen in return for a mandatory monthly deduction from their remuneration.[3] However, quarantine and the health of seamen remained a local issue until 1870, when the Marine Hospital Service established a medical organization with centralized administration.[4] The service founded its own hospitals for sick seamen in a few ports, including Baltimore, before 1871. In addition, it made arrangements with local institutions to provide services for seamen for $3 a week in 1851.[5] In Baltimore, mariners also were cared for at the Baltimore Infirmary, which, after 1823, was staffed by the Daughters of Charity (personal communications, John Jensen). In the 1830s, the Marine Hospital Service contracted with the medical department of Washington University, which provided services for seamen on two floors of its building. Patients were under the direct care of faculty and students of the university. In the 1840s, the government switched the contract to the University of Maryland.[6]

The first small quarantine hospital in Baltimore was constructed in the 1790s and was in use until about 1830. Located at Hawkin's Point, it could only be reached by boat. In 1801, the lazaretto for the reception, airing and cleaning of goods was established at Lazaretto Point. In 1830, arrangements were made with the United States Marine Hospital Service to fit part of the lazaretto with accommodation for patients who had previously gone to the quarantine hospital at Hawkin's Point.[2] In 1836, the lazaretto was destroyed by fire. Apparently only sailors with diseases covered by quarantine regulations went to

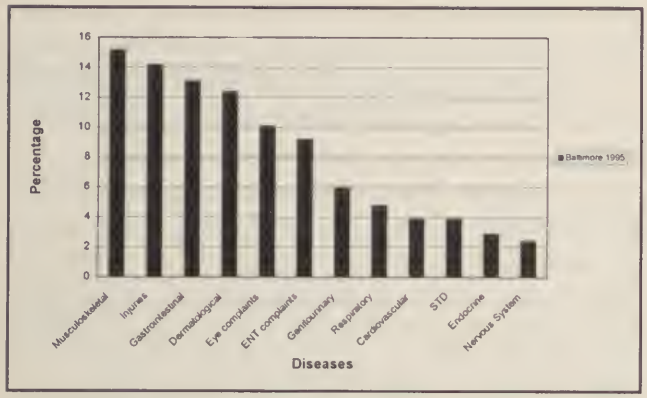


FIGURE 2. Diseases of merchant seamen in Baltimore 1995

these institutions, while seamen with "ordinary diseases" were cared for at different hospitals in the city.[2] Around 1845, the city constructed a new quarantine station. The Marine Hospital, despite its name, usually did not care for seamen. The Marine Hospital was designed to accommodate sick immigrants and served as pest-house providing for cases of small-pox and typhus fever, and provided for seamen only if they had communicable diseases. In 1881, the quarantine station moved to Leading Point, where wooden buildings were erected, one for sailors and passengers with contagious diseases and one as the pest-house for the city.[2]

The 20th century

The quarantine station was operated by the City of Baltimore and taken over by the federal Public Health Service in 1918. With the reduction of epidemic diseases the operation was phased out. The station at Leading Point was closed in 1961 and the quarantine office was moved to the Custom House in downtown Baltimore. Later it was moved to Baltimore-Washington Airport and then to Dulles Airport. The last regular inspections took place until about 1975. A quarantine service operated by the U.S. Agricultural Department currently boards ships and checks for animal and plant diseases.[2]

The Marine Hospital also ran an outpatient clinic for merchant seamen. In addition, a few physicians in private practice continued to see merchant seamen. With the closing of the Public Health Hospital virtually all merchant seamen who need medical attention now see a private physician.[7]

The health of merchant seamen in 1995

The major practice

In Baltimore, internist John MacGibbon, M.D., specializes in the health care of merchant seamen. He has been providing health care for seamen since 1959, when he was appointed by the Italian, Norwegian and Swedish Insurance Board for Seamen, which was integrated with the respective National Health Insurance Schemes. While he sees most seamen and makes appropriate specialty referrals, when necessary, patients are admitted directly to the hospital. Occasionally, patients, in particular captains, request specialty referral without primary consultation. Patients are sometimes repatriated,[7] which is a problem because they are occasionally sent to countries that do not offer adequate care.

Sources of data and methodology

The records of 868 seamen seen by this Baltimore internist in 1995 were reviewed. Although Baltimore's importance as a port has decreased over the last decades, 2,158 ships came to Baltimore in 1995. The crews' size averaged about 25.[7] Therefore, more than 50,000 seamen came to Baltimore in 1995. It is difficult to assess which countries the ships and crews come from, since "flags of convenience" have become very common. Often, the captain is from the country of the ship's owners, while the seamen are from third world countries. To receive medical care, a seaman has to obtain a request form from the master of the ship. In most cases, this form includes the name, age and nationality of the patient, as well as the presenting complaint and a record of the treatment received on board. The physician completes a diagnosis, offers treatment, and recommends whether or not the patient is fit for work. One copy of the form is returned to the ship, one is forwarded to the shipping agency for billing purposes, and the last is retained by the practice. This obviously raises issues of confidentiality, in particular, with sensitive diseases such as sexually transmitted diseases. These patients prefer to pay privately to avoid the diagnosis being disclosed to the shipping agency.

The data for this article were collected anonymously. Neither the name of the ship, nor the flag it was sailing under, were recorded.

Results

The average age of the seamen was just under 39 years. Three patients were female. A few women were directly

referred to a gynecologist. The countries from which there were ten or more seamen are represented in **Figure 1**.

The diseases were coded according to the ICD-9 major categories. Eye complaints were not subsumed under "nervous system" but were coded separately. These slight deviations were made to compare the data to earlier similar studies.

Four groups of diseases accounted for most cases: musculoskeletal complaints (15.2%), injuries (14.2%) gastrointestinal (13.1%), and dermatological diseases (12.4%). The remaining diagnoses are shown in **Figure 2**.

Musculoskeletal complaints without acute trauma were very common, in particular, lower back pain and arthralgia. The seamen attributed the problems to the hard physical work they had to perform, but not to a particular event. Because the seamen often worked in a kneeling position, knee joint injuries were common. It is unlikely that the joint problems were due to the "wear and tear" often associated with joints problem in older age because of the youthful population.

Injuries presented the second largest group of presenting complaints. They include fractures, contusions, and lacerations. Often, these injuries had received some attention on board and were seen some time after the accident. Most of these injuries were directly related to the work place, often in the engine room. Few injuries were caused by fighting among crew members. Alcohol use was mentioned. Most injuries were dealt with locally; only a few cases required repatriation. Patients with very serious injuries were sent directly to a hospital and were not recorded in the practice. The high percentage of serious injuries suggests that worker safety is an important issue.

The third largest group was gastrointestinal complaints. Only a few of these cases were a result of diarrhea. Most cases were epigastric discomfort or pain – gastritis or peptic ulcer, as far could be established from symptoms since the diagnosis could often not be confirmed by imaging. There were a few cases of appendicitis requiring immediate hospitalization. Appendicitis was by far the most prevalent reason for hospitalization in the study year.

Among dermatological complaints, eczema or contact dermatitis were common, suggesting occupational exposure to irritants such as detergents, oil, paint, and similar products.

Eye complaints were very common; almost 44% consisted of corneal foreign bodies as an occupational injury. This suggests that the seamen were not wearing protective eye glasses. The second most common eye complaint was poor vision. Many of these patients seemed to come from poor countries and had not had the opportunity to receive glasses. Among ENT complaints, otitis media and otitis externa were most common. Often these diseases had not been treated appropriately while the ship was at sea.

Many of the genitourinary patients presented with urethritis or hematuria. Surprisingly, both genitourinary and sexually transmitted diseases accounted for a small proportion of all cases.

Fifty-two percent of the respiratory diseases were acute; 38% were bronchitis. Bronchitis may be explained by the fact that smoking is very common among this population.[8,9] Hypertension accounted for two-thirds of the patients with cardiovascular disease. Cardiovascular disease was infrequent because the population is young. Endocrine disorders were mostly diabetes mellitus.

Conclusion

Good health care for merchant seamen is an important asset to the port of Baltimore. Providing health care for seamen is a demanding and challenging task. Patients have to be seen on weekends and at short notice since ships often remain in port for only a few hours. Being a port physician therefore requires a great deal of dedication and experience.

The benefits of this study include defining the distribution of diseases, which reveal important issues of health care for seamen in Baltimore.

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What Your Patients MAY BE READING

Lifesaving News for Women of All Ages

A Special Report on Heart Disease

One woman's story is used to provide an example for women of all ages. This woman sought medical care for a 10-hour stomachache and was subsequently rushed to the local emergency room for a heart irregularity spotted in her electrocardiogram. Bypass surgery was performed within the week. The article discusses women's risks for heart attacks, strokes and other cardiovascular diseases, pointing out that women are more likely to die from a first-time heart attack than are men. A description of current testing procedures and promising treatments is given. Symptoms to take seriously and heart-smart strategies provide practical guidance.

Family Circle, June 22, 1999

Your No-Nag Guide to Keeping Him Healthy

His car, he cares for inside and out. His body, he drives into the ground. How to get him more focused on personal upkeep?

Beginning with a few basic questions, this article directs wives on evaluating their husbands' risks for heart disease, cancer, stroke, depression, and stress. "Sneaky wives" tell secrets of how they got their husbands to focus more on their health. A good preventive health list by decade, 20s, 30s, 40s, is provided along with a chart to determine life expectancy based on risk factors such as smoking, drinking, and lifestyle. Simple do-at-home tests for testicular cancer, skin cancer, thyroid problems, and potency are provided.

Redbook, June 1999

Cranberry Juice for Your Health

This short piece advises readers that a recent University of Rutgers study confirmed that cranberry juice wards off urinary tract infections. This study was done in response to a 1994 Harvard Medical School study that found a 54% reduction in bacteria in urine when respondents drank cranberry juice. The recommendation is that men prone to infection consume 10 ounces of cranberry juice per day and that the juice be at least 25% cranberry.

Black Men, July 1999

Saving Sight

Beating the Macular Degeneration Epidemic

First providing a detailed background of macular degeneration with astounding figures like 500,000 persons per year diagnosed, this article goes on to describe the perils of one woman and her disappointment in conventional medicine. In response, she sought help within the alternative medicine field and developed her own Integrated Visual Healing (IVH). The article describes the IVH program in detail including diet and nutrition, acupressure, micro-current therapy, color therapy, massage, stress management, and eye health exercises. Case studies from the IVH program are reported and the author documents visual functional improvement.

Alternative Medicine, July 1999

Human Breast Milk Kills Cancer Cells

Exciting evidence from Sweden that the answer to cancer could be contained in mothers' milk.

Looking for a way to fight germs, a Swedish immunologist began mixing mothers' milk and cancer cells together seven years ago and found that it compels cancer cells in every type of cancer. She now needs to prove her discovery, a challenge for a small infectious lab disease in a foreign country. But, they are now the only non-American lab with American Cancer Society support. After finding that breast milk caused cancer cells to commit suicide, they identified the protein - called HAMLET - that changes into a cancer assassin. The article provides lengthy laymen's explanations of protein folding and apoptosis as well as the benefits of breast milk.

Discover, June 1999

Fibroids: Are You Getting the Right Treatment?

Don't say yes to any procedure until you read this.

This article describes fibroids: what they are; what the symptoms are; whether or not they will cause infertility; and when they need treatment. Treatment options are listed and include: abdominal myomectomy, hysteroscopic myomectomy, laparoscopic myomectomy, laparoscopic myomectomy/resection and ablation, and uterine artery embolization. Each treatment is explained and for each these two questions answered: who should consider it and what should you know?

Good Housekeeping, June 1999

Books, Etc.

The Cost Effective Use of Leeches and Other Musings of a Medical School Survivor.

Jeffrey A. Drayer, M.D., Galen Press Ltd., Tuscon, AZ, 1999, 140 pages, $14.95 (softcover)

The Cost Effective Use of Leeches and Other Musings of a Medical School Survivor is a brilliant collection of satirical essays, written by Jeffrey A. Drayer, M.D. The essays, which follow his recent passage through Duke Medical School, are a refreshing, honest look at a student's opinion of the U.S. medical school system and the individuals within it. Any doctor or medical student with a sense of humor would certainly relate to this young man's catharsis and laugh while doing so. Be forewarned, this book, while supposedly based on Dr. Suess' rhymes, is certainly more offensive at times.

> Dr. Drayer states "medical school.... involves learning to deal with a lot of different people, Many.... simply [there] to make you unhappy... Surgeons who ask you impossible question[s]... until you finally contaminate yourself... Residents who keep you after work for hours to discuss the fifty most likely causes for a cough in a patient with culture-proven pneumonia, and nurses who think they know everything about medicine despite never having had any training...physician assistants with an inferiority complex...whose first sentence to any medical student is always 'I could've gone to med school, you know, but I made a lifestyle decision'...enormous Hospital Unit Coordinators (HUCs) who sit around all day eating hamburgers and not answering phones, whose very purpose, it seems, is to keep vital medical information from students so they look stupid on rounds." While not vulgar at any point, this future dermatologist certainly holds nothing back as he comments on everything and insults everyone in the healthcare system.

With the writing style of George Carlen and Denis Miller on a "rant," Dr. Drayer expresses all the feelings and thoughts one would love to say about the medical school experience and the healthcare system, but doesn't. In one book this young man has shown the faults within the "perfect system," and reminds those in practice and power not just what it's like to be a student, but what it means to be a student today. I thoroughly enjoyed this book and would put it on the required reading list of every medical school attending, and future medical student. I believe this book will help attendings laugh at themselves and relate to the ones they teach and forewarn every college student of the trials ahead.

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C·M·E·R·C update

The CMERC Update, now in its fourth year, informs all Med Chi accredited CME sponsors about the activities of the Continuing Medical Education Review Committee (CMERC). The CMERC received feedback (both negative and positive) from our accredited sponsors this past year. This exchange of information has kept us all better informed.

Staff departure

Recently, the Continuing Medical Education Review Committee (CMERC), lost a valuable staff member from the department of education. Carol Doctrow, who served as CME manager for the past three years, left to explore a new career opportunity. Ms. Doctrow did an outstanding job as the liaison between the committee and MedChi's sponsors. The committee wishes Ms. Doctrow the best of luck in her new endeavors.

Amy Berdann, director of education, has taken over Ms. Doctrow's responsibilities.

Recurrent compliance problems

As the committee reviews applications for accreditation and reaccreditation, surveyors have noted the recurrence of the same problems in complying with the Essentials as outlined in the *CMERC Handbook.*

When reviewing a continuing medical education program, the CMERC relies heavily on the documentation provided in the organization's application for (re)accreditation or Interim Report. In nearly every case, the CMERC staff person will ask for minutes and attachments from the sponsor. Frequently, when assessing the CME program, problems will arise if the minutes are incomplete or do not adequately describe the process by which the institution's CME committee complies with the materials outlined in the *Handbook.*

The CME committee minutes should reflect the following items:

1. Committee attendance and the date and time of the meeting.
2. The steps by which the committee will bring a program to fruition (when a program is being planned).

The minutes should answer the following questions:

1. *Why* is a particular subject being considered as a topic for the program?
2. *What* should an attendee learn from participating in the program?
3. *Who, how, when, and where*? (Should address questions such as identifying a speaker, format of the program, location, date, and time of the program.)
4. *Evaluation.* (After the program has occurred, the CME committee should review whether the program succeeded in accomplishing the established goals.)

The minutes should also reflect any other business brought to the CME committee. It should also be understood that each institution can and should develop a format and language that is appropriate for local usage, but does not contain a word picture of the thinking and actions of the committee.

1. *Needs assessment*: The sponsor may use a wide variety of procedures to identify needs. Sample surveys, interviews of prospective participants, analysis of self-assessment, examination results, epidemiological data, patient care audits, searches from current literature, and consensus of experts in a certain field are all prime examples. Just be sure to document how the committee developed the need!
2. *Objectives:* The goals and objectives for the lecture were determined as follows:

   The participants will:

   A. Gain an improved understanding of the use of newer antidepressant medications;
   B. Be able to compare antidepressant medications to determine the right medications for specific patient groups;

C. Learn to utilize new strategies to improve patient compliance and improve patient outcome.

Notice that the sample objectives written above are written in the form of "learning objectives." They outline what an attendee *should* learn by the conclusion of the program. These objectives accomplish the following goals:

1. They communicate to the speaker what the committee would like the outcome to be at the conclusion of the program.
2. They communicate the agenda of the program to the potential attendee.
3. They are used as methods to evaluate the speaker. The educational objectives should not be decided by the speaker, but instead decided by the committee based on needs assessment.
4. *Implementation*: A speaker well known for his expertise in a particular area was chosen. A letter with the objectives of the talk and a disclosure form are to be sent to {the speaker}. The committee determined to award one CME {Category 1} credit to lecture attendees.
5. *Evaluation:* The committee reviewed the evaluation summary (taken from each attendees evaluation form). The speaker was {name}, M.D. who spoke on {topic}. The analysis showed that {number} attendees thought that the objectives were accomplished and one attendee thought that the objectives were partially accomplished. The committee was satisfied with with the content of the talk; none of the attendees thought the presentation was biased toward any commercial product.

The above is a sample of what might be included in a review of the program.

NOTE: Under the heading, it might be appropriate to indicate that a letter has been sent to the speaker thanking him/her and including a summary of the evaluations.

Approval of continuing medical education programs

The following sponsors have been reaccredited:

1. Baltimore City Medical Society
2. Carroll County General Hospital
3. CIVISTA Health Center, Inc.
4. Maryland Psychiatric Society, Inc.
5. Memorial Hospital and Medical Center of Cumberland, Inc.

Jules Cahan, M.D., and Norman Bohrer, M.D. are members of the Continuing Medical Education Review Committee. ■

The purpose of this newsletter is to inform CME chairpersons, CME committee members, and all interested physicians about the activities of Med Chi's Continuing Medical Education Review Committee (CMERC) and about the rules and procedures that affect the implementation of CME programs in Maryland. When appropriate, news from the ACCME (Accreditation Council for Continuing Medical Education) is included.

Parris N. Glendening - Governor of Maryland

Georges C. Benjamin, M.D., Secretary
Department of Health & Mental Hygiene

DHMH Maryland Department of Health & Mental Hygiene

Carlessia A. Hussein, Dr. P.H., Director
Community and Public Health Administration

Diane M. Dwyer, M.D., Director
Epidemiology & Disease Control Program

EPIDEMIOLOGY AND DISEASE CONTROL PROGRAM

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May/June, 1999

Selected Communicable Diseases in Maryland in 1998

This report, the first of a two-part series to be continued in the July/August issue, contains tables that detail the case numbers and rates for selected communicable diseases reported to the Epidemiology and Disease Control Program in 1998. In the July/August issue, brief narrative accounts augmented with graphs and maps will describe the epidemiology of a subset of those diseases.

This report summarizes cases *reported in* 1998 in Maryland. Due to delayed reporting, some of the cases will have had onset of disease in an earlier year. (Through 1993, this yearly report summarized cases with *onset in* the reporting year.) Tables 1a and 1b detail the number of cases reported by jurisdiction; tables 2a and 2b contain the corresponding case rates per 100,000 population. The population figures used in rate calculations come from the Maryland Office of Planning (total population projections by age, race and sex based on the population forecasts completed in February 1998).

Communicable disease reporting is mandated by both Maryland law and regulation. This passive system receives reports primarily from health care providers and laboratories; some reports come from other sources. Active surveillance is conducted for invasive bacterial diseases due to *Haemophilus influenzae*, *Neisseria meningitidis*, and other selected pathogens. The new Emerging Infections Program is another active surveillance project that targets primarily foodborne diseases. The communicable disease staff at the State's 24 local health departments verify that cases meet a standard clinical and/or laboratory case definition of the Centers for Disease Control and Prevention (CDC). Local investigators may also seek to identify risk factors for disease acquisition, provide patient education to reduce the spread of disease, identify contacts for prophylactic treatment, and initiate other public health control measures when appropriate.

Each week data from the 24 local health departments is combined at the Division of Communicable Disease Surveillance at DHMH and then transmitted to the CDC for the Morbidity and Mortality Weekly Report (*MMWR*). These provisional weekly data are further reviewed, edited, and analyzed at the State and local state health departments to produce this yearly summary.

The prompt, accurate, and complete reporting by physicians, other health care providers, laboratories, etc., is extremely important to achieving our goal to describe and control communicable diseases in Maryland. We are committed to improving the quality of surveillance data and to increasing accessibility to it via our Internet home page (www.edep.org). We gratefully acknowledge the contributions of local health departments, infection control professionals, laboratories, physicians and other health care providers who provide essential information. Thanks are also due to the DHMH staff who assisted in case investigation and data analysis, and especially to Ms. Anne Jones, who coordinated data entry and editing.

Table 1a. Cases of Selected Notifiable Diseases Reported in Maryland in 1998 by County

DHMH
Maryland Department of Health and Mental Hygiene

Jurisdiction	Population	Infectious Parotitis (Mumps)	Pertussis	Rubella (German Measles)	Rubeola (Measles)	Hepatitis A (Acute-Symptomatic)	Hepatitis B (Acute-Symptomatic)	Hepatitis C (Acute-Symptomatic)	Encephalitis	Haemophilus influenzae Disease	Meningococcal Disease	Meningitis, Bacterial	Meningitis, Aseptic	Salmonellosis	Typhoid Fever	Shigellosis	AIDS	Chlamydia	Gonorrhea	Syphilis, Primary and Secondary	Syphilis, Congenital	Tuberculosis	Lyme Disease	Rocky Mountain Spotted Fever	Animal Bites	Rabies, Animal
Allegany	75,520		2				2			3		2	2	8		1	1	72	16			2			253	7
Anne Arundel	471,379		6		1	33	16	13	1	7	1	12	26	90		10	52	648	318	17		25	60		1,299	73
Baltimore City	660,545		13			127	15			14	13	35	19	145	1	29	911	5,663	6,989	483	32	84	4	1	1,024	6
Baltimore Co.	722,740		5			121	29	1		9	4	20	51	140		22	93	774	455	32	2	24	77		1,656	30
Calvert	70,234		1			2	1						8	8		2	10	109	39	2		4	19	1	320	20
Caroline	29,863						1					2	1	8			3	88	35			2	17	5	115	10
Carroll	144,904					13	4					2	3	18		2	6	66	16	4		2	35		452	13
Cecil	81,260					4	1							8			8	32	9				16		239	10
Charles	118,027					2	4	2				5	6	18		2	9	263	70	2			44	1	407	8
Dorchester	30,153									1			4	2			12	122	106	4			4	2	132	14
Frederick	186,559		2			7	1			1	1	1	12	39		3	10	209	124			4	16		271	41
Garrett	30,117					2								6			1	13	1						102	9
Harford	218,910		8			13	8	1	1		2	3	23	26		1	23	334	138	2		8	82		555	23
Howard	238,111		3			14	5		1	3	1	5	11	50	2	2	19	176	99	5	2	12	44	1	377	11
Kent	19,061					3								7			2	40	21			1	47		53	2
Montgomery	832,117		18	1		41	15		5	5	3	9	62	170	5	68	93	696	339	10	3	73	52	1	1,120	41
Prince George's	777,668		3			22	25	3	2	9	4	16	58	95	2	43	228	2,897	1,886	51	6	65	63		1,136	30
Queen Anne's	39,794		1				2						3	8			3	61	21	2		5	31		193	6
Saint Mary's	86,415					1					1		1	13		7	5	169	75	3		3	9	1	206	10
Somerset	24,678		4									1	2	6		5	5	141	53	4		2	7		88	9
Talbot	32,941									1	1	1	2	7			4	97	60	8			22	5	122	20
Washington	129,292					3	4		2	1	3	4	12	16		3	10	211	130		1	4	1		277	16
Wicomico	81,495					2	6	1	1	2	1	2	8	32	1	2	10	386	200	32	1	3	4		418	15
Worcester	41,791					3	4			1		1		11			4	187	86	4		1	5		168	15
Not Stated																	81									
Maryland Total	5,143,574	0	66	1	1	413	143	21	13	57	35	121	314	931	11	202	1,603	13,454	11,286	665	47	324	659	18	10,983	439
Maryland Totals for Prior Years	1997	1	119	0	2	188	172	9	13	65	42	121	342	1,231	5	423	1,802	13,970	11,563	889	60	340	494	20	11,260	619
	1996	37	278	0	2	256	169	8	30	76	58	113	210	1,160	18	985	2,278	20,705	11,316	733	45	319	448	38	10,415	637
	1995	41	49	1	1	221	262	6	35	74	42	172	323	1,215	6	639	2,500		14,675	567	24	370	368	36	10,491	441
	1994	65	53	0	4	198	351	23	33	80	28	175	244	1,167	14	323	2,808		16,823	326	22	363	343	20	10,396	520
	1993	85	167	2	4	184	288	16	25	64	50	158	257	1,028	8	453	1,617		13,832	393	36	417	207	23	10,349	624

Table 1b. Cases of Selected Notifiable Diseases Reported in Maryland in 1998 by County

Continued

DHMH
Maryland Department of Health and Mental Hygiene

Jurisdiction	Population	Amebiasis	Anthrax	Botulism	Brucellosis	Campylobacteriosis *	Cholera	E. coli O157:H7	Giardiasis *	Kawasaki Syndrome	Legionellosis	Leprosy	Leptospirosis	Listeriosis *	Malaria	Mycobacteriosis, Non-TB	Newborn Septicemia	Plague	Poliomyelitis	Psittacosis	S. typhi Carrier	Tetanus	Trichinosis	Tularemia	Vibrio (Non-O1) Infection	Yersiniosis
Allegany	75,520															3										
Anne Arundel	471,379					38		5	22		1			3	3	34	6								1	1
Baltimore City	660,545	4				71		3	21		6			4	4	153						1		1	1	11
Baltimore Co.	722,740	2				73		5	17		11			2	3	35									3	1
Calvert	70,234					2		1	1					1		3										
Caroline	29,863					1										1										
Carroll	144,904					17		3	5		1					15	1									
Cecil	81,260										1					7										
Charles	118,027					14		3	5					1		8	3									
Dorchester	30,153															2										
Frederick	186,559					21		1	6						2	18										
Garrett	30,117					1			1																	
Harford	218,910					17		3	2	3	5			2		10									1	
Howard	238,111					13		3	8						1	6										1
Kent	19,061					2									1	1									1	
Montgomery	832,117	12		1	1	70		7	30	7	1				41	54	3									
Prince George's	777,668	5				23		1	10	10	4			2	32	54	12								3	1
Queen Anne's	39,794	2				1		1	1					1		3										
Saint Mary's	86,415	1				2			2						1	3	1									
Somerset	24,678					3										10	1									
Talbot	32,941					3		1			1					6										
Washington	129,292					3		3	1	2	3				1	14	1									
Wicomico	81,495					21	1	3	4		1					38	1									
Worcester	41,791					2				2						8	2									
Not Stated																										
Maryland Total	5,143,574	26	0	1	1	398	1	43	136	24	35	0	0	16	89	486	31	0	0	0	0	1	0	1	10	15
Maryland Totals	1997	22	0	0	0	280	0	28	140	29	23	1	4	23	85	875	53	0	0	1	3	1	0	0	6	9
for	1996	16	0	1	0	282	0		148	29	39	0	1	13	87	802	54	0	0	0	0	0	0	0	4	8
Prior Years	1995	11	0	1	2	206	0		147	39	29	2	1	10	63	1040	93	0	0	2	0	0	0	0	6	13
	1994	12	0	1	1	204	1		108	36	82	0	1	19	83	1048	77	0	1	2	2	1	0	1	1	18
	1993	9	0	1	0	141	0		107	30	52	0	1	9	57	695	133	0	0	1	1	2	0	0	1	24

Epidemiology and Disease Control Program - Division of Communicable Disease Surveillance

Rev.4-15-1999

* Not a reportable disease - cases not entered by all jurisdictions

Table 2a. Case Rates per 100,000 Population of Selected Notifiable Diseases Reported in Maryland, 1998

DHMH
Maryland Department of Health and Mental Hygiene

Jurisdiction	Population	Infectious Parotitis (Mumps)	Pertussis	Rubella (German Measles)	Rubeola (Measles)	Hepatitis A	Hepatitis B	Hepatitis NANB	Encephalitis	Haemophilus influenzae Disease	Meningococcal Disease	Meningitis, Bacterial	Meningitis, Aseptic	Salmonellosis	Typhoid Fever	Shigellosis	AIDS	Chlamydia	Gonorrhea	Syphilis, Primary and Secondary	Syphilis, Congenital	Tuberculosis	Lyme Disease	Rocky Mountain Spotted Fever	Animal Bites	Rabies, Animal
Allegany	75,520	0.0	2.6	0.0	0.0	0.0	2.6	0.0	0.0	4.0	0.0	2.6	2.6	10.6	0.0	1.3	1.3	95	21	0.0	0.0	2.6	0.0	0.0	335	9.3
Anne Arundel	471,379	0.0	1.3	0.0	0.2	7.0	3.4	2.8	0.2	1.5	0.2	2.5	5.5	19.1	0.0	2.1	11.0	137	67	3.6	0.0	5.3	12.7	0.0	276	15.5
Baltimore City	660,545	0.0	2.0	0.0	0.0	19.2	2.3	0.0	0.0	2.1	2.0	5.3	2.9	22.0	0.2	4.4	137.9	857	1058	73.1	4.8	12.7	0.6	0.2	155	0.9
Baltimore Co.	722,740	0.0	0.7	0.0	0.0	16.7	4.0	0.1	0.0	1.2	0.6	2.8	7.1	19.4	0.0	3.0	12.9	107	63	4.4	0.3	3.3	10.7	0.0	229	4.2
Calvert	70,234	0.0	1.4	0.0	0.0	2.8	1.4	0.0	0.0	0.0	0.0	0.0	11.4	11.4	0.0	2.8	14.2	155	56	2.8	0.0	5.7	27.1	1.4	456	28.5
Caroline	29,863	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	6.7	3.3	26.8	0.0	0.0	10.0	295	117	0.0	0.0	6.7	56.9	16.7	385	33.5
Carroll	144,904	0.0	0.0	0.0	0.0	9.0	2.8	0.0	0.0	0.0	0.0	1.4	2.1	12.4	0.0	1.4	4.1	46	11	2.8	0.0	1.4	24.2	0.0	312	9.0
Cecil	81,260	0.0	0.0	0.0	0.0	4.9	1.2	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	9.8	39	11	0.0	0.0	0.0	19.7	0.0	294	12.3
Charles	118,027	0.0	0.0	0.0	0.0	1.7	3.4	1.7	0.0	0.0	0.0	4.2	5.1	15.3	0.0	1.7	7.6	223	59	1.7	0.0	0.0	37.3	0.8	345	6.8
Dorchester	30,153	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	13.3	6.6	0.0	0.0	39.8	405	352	13.3	0.0	0.0	13.3	6.6	438	46.4
Frederick	186,559	0.0	1.1	0.0	0.0	3.8	0.5	0.0	0.0	0.5	0.5	0.5	6.4	20.9	0.0	1.6	5.4	112	66	0.0	0.0	2.1	8.6	0.0	145	22.0
Garrett	30,117	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.9	0.0	0.0	3.3	43	3	0.0	0.0	0.0	0.0	0.0	339	29.9
Harford	218,910	0.0	3.7	0.0	0.0	5.9	3.7	0.5	0.5	0.0	0.9	1.4	10.5	11.9	0.0	0.5	10.5	153	63	0.9	0.0	3.7	37.5	0.0	254	10.5
Howard	238,111	0.0	1.3	0.0	0.0	5.9	2.1	0.0	0.4	1.3	0.4	2.1	4.6	21.0	0.8	0.8	8.0	74	42	2.1	0.8	5.0	18.5	0.4	158	4.6
Kent	19,061	0.0	0.0	0.0	0.0	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.7	0.0	0.0	10.5	210	110	0.0	0.0	5.2	246.6	0.0	278	10.5
Montgomery	832,117	0.0	2.2	0.1	0.0	4.9	1.8	0.0	0.6	0.6	0.4	1.1	7.5	20.4	0.6	8.2	11.2	84	41	1.2	0.4	8.8	6.2	0.1	135	4.9
Prince George's	777,668	0.0	0.4	0.0	0.0	2.8	3.2	0.4	0.3	1.2	0.5	2.1	7.5	12.2	0.3	5.5	29.3	373	243	6.6	0.8	8.4	8.1	0.0	146	3.9
Queen Anne's	39,794	0.0	2.5	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	7.5	20.1	0.0	0.0	7.5	153	53	5.0	0.0	12.6	77.9	0.0	485	15.1
Saint Mary's	86,415	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	1.2	0.0	1.2	15.0	0.0	8.1	5.8	196	87	3.5	0.0	3.5	10.4	1.2	238	11.6
Somerset	24,678	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	8.1	24.3	0.0	20.3	20.3	571	215	16.2	0.0	8.1	28.4	0.0	357	36.5
Talbot	32,941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	6.1	21.3	0.0	0.0	12.1	294	182	24.3	0.0	0.0	66.8	15.2	370	60.7
Washington	129,292	0.0	0.0	0.0	0.0	2.3	3.1	0.0	1.5	0.8	2.3	3.1	9.3	12.4	0.0	2.3	7.7	163	101	0.0	0.8	3.1	0.8	0.0	214	12.4
Wicomico	81,495	0.0	0.0	0.0	0.0	2.5	7.4	1.2	1.2	2.5	1.2	2.5	9.8	39.3	1.2	2.5	12.3	474	245	39.3	1.2	3.7	4.9	0.0	513	18.4
Worcester	41,791	0.0	0.0	0.0	0.0	7.2	9.6	0.0	0.0	2.4	0.0	0.0	0.0	26.3	0.0	0.0	9.6	447	206	9.6	0.0	2.4	12.0	0.0	402	35.9
Maryland Total	5,143,574	0.0	1.3	0.0	0.0	8.0	2.8	0.4	0.3	1.1	0.7	2.4	6.1	18.1	0.2	3.9	31.2	262	219	12.9	0.9	6.3	12.8	0.3	214	8.5
Maryland Totals for Prior Years	1997	0.0	2.3	0.0	0.0	3.7	3.4	0.2	0.3	1.3	0.8	2.4	6.7	24.1	0.1	8.3	35.2	273	226	17.4	1.2	6.6	9.7	0.4	220	12.1
	1996	0.7	5.5	0.0	0.0	5.0	3.3	0.2	0.6	1.5	1.1	2.2	4.1	22.9	0.4	19.4	44.9	408	223	14.4	0.9	6.3	8.8	0.7	205	12.6
	1995	0.8	1.0	0.0	0.0	4.4	5.2	0.1	0.7	1.5	0.8	3.4	6.4	24.1	0.1	12.7	49.6		291	11.3	0.5	7.3	7.3	0.7	208	8.8
	1994	1.3	1.1	0.0	0.1	4.0	7.0	0.5	0.7	1.6	0.6	3.5	4.9	23.3	0.3	6.5	56.2		336	6.5	0.4	7.3	6.9	0.4	208	10.4
	1993	1.7	3.4	0.0	0.1	3.7	5.8	0.3	0.5	1.3	1.0	3.2	5.2	20.8	0.2	9.1	32.6		279	7.9	0.7	8.4	4.2	0.5	209	12.6

Table 2b. Cases Rates per 100,000 Population of Selected Notifiable Diseases Reported in Maryland, 1998

Continued

DHMH
Maryland Department of Health and Mental Hygiene

Jurisdiction	Population	Amebiasis	Anthrax	Botulism	Brucellosis	Campylobacteriosis *	Cholera	E. coli O157:H7	Giardiasis *	Kawasaki Syndrome	Legionellosis	Leprosy	Leptospirosis	Listeriosis *	Malaria	Mycobacteriosis, Non-TB	Newborn Septicemia	Plague	Poliomyelitis	Psittacosis	S. typhi Carrier	Tetanus	Trichinosis	Tularemia	Vibrio (Non-O1) Infection	Yersiniosis
Allegany	75,520	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Anne Arundel	471,379	0.0	0.0	0.0	0.0	8.1	0.0	1.1	4.7	0.0	0.2	0.0	0.0	0.6	0.6	7.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Baltimore City	660,545	0.6	0.0	0.0	0.0	10.7	0.0	0.5	3.2	0.0	0.9	0.0	0.0	0.6	0.6	23.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.2	1.7
Baltimore Co.	722,740	0.3	0.0	0.0	0.0	10.1	0.0	0.7	2.4	0.0	1.5	0.0	0.0	0.3	0.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1
Calvert	70,234	0.0	0.0	0.0	0.0	2.8	0.0	1.4	1.4	0.0	0.0	0.0	0.0	1.4	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caroline	29,863	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carroll	144,904	0.0	0.0	0.0	0.0	11.7	0.0	2.1	3.5	0.0	0.7	0.0	0.0	0.0	0.0	10.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cecil	81,260	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Charles	118,027	0.0	0.0	0.0	0.0	11.9	0.0	2.5	4.2	0.0	0.0	0.0	0.0	0.8	0.0	6.8	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dorchester	30,153	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Frederick	186,559	0.0	0.0	0.0	0.0	11.3	0.0	0.5	3.2	0.0	0.0	0.0	0.0	0.0	1.1	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Garrett	30,117	0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Harford	218,910	0.0	0.0	0.0	0.0	7.8	0.0	1.4	0.9	1.4	2.3	0.0	0.0	0.9	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Howard	238,111	0.0	0.0	0.0	0.0	5.5	0.0	1.3	3.4	0.0	0.0	0.0	0.0	0.0	0.4	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Kent	19,061	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0
Montgomery	832,117	1.4	0.0	0.1	0.1	8.4	0.0	0.8	3.6	0.8	0.1	0.0	0.0	0.0	4.9	6.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prince George's	777,668	0.6	0.0	0.0	0.0	3.0	0.0	0.1	1.3	1.3	0.5	0.0	0.0	0.3	4.1	6.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1
Queen Anne's	39,794	5.0	0.0	0.0	0.0	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saint Mary's	86,415	1.2	0.0	0.0	0.0	2.3	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	1.2	3.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Somerset	24,678	0.0	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.5	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Talbot	32,941	0.0	0.0	0.0	0.0	9.1	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	129,292	0.0	0.0	0.0	0.0	2.3	0.0	2.3	0.8	1.5	2.3	0.0	0.0	0.0	0.8	10.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wicomico	81,495	0.0	0.0	0.0	0.0	25.8	1.2	3.7	4.9	0.0	1.2	0.0	0.0	0.0	0.0	46.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Worcester	41,791	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	19.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maryland Total	5,143,574	0.5	0.0	0.0	0.0	7.7	0.0	0.8	2.6	0.5	0.7	0.0	0.0	0.3	1.7	9.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Maryland	1997	0.4	0.0	0.0	0.0	5.5	0.0	0.5	2.7	0.6	0.4	0.0	0.1	0.4	1.7	17.1	1.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2
Totals	1996	0.3	0.0	0.0	0.0	5.6	0.0		2.9	0.6	0.8	0.0	0.0	0.3	1.7	15.8	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
for	1995	0.2	0.0	0.0	0.0	4.1	0.0		2.9	0.8	0.6	0.0	0.0	0.2	1.3	20.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Prior	1994	0.2	0.0	0.0	0.0	4.1	0.0		2.2	0.7	1.6	0.0	0.0	0.4	1.7	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Years	1993	0.2	0.0	0.0	0.0	2.8	0.0		2.2	0.6	1.0	0.0	0.0	0.2	1.2	14.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5

Epidemiology and Disease Control Program - Division of Communicable Disease Surveillance

Rev.4-15-1999

* Not a reportable disease - cases not entered by all jurisdictions

The Johns Hopkins Medical Institutions

All courses at the Thomas B. Turner Building unless otherwise indicated. For information on continuing medical education activities, contact the Office of Continuing Medical Education, 720 Rutland Ave., Baltimore, MD 21205, 410-955-2959, Fax 410-955-0807 (e-mail: cmenet@som.adm.jhu.edu).

Clinical preventive medicine: delivery of preventive services in the ambulatory setting, sponsored by The John Hopkins University School of Medicine, division of general internal medicine, department of medicine, at the Annapolis Marriott Waterfront Hotel, Annapolis, Maryland. Credits: 9.5 Cat 1 AMA credits; 8.25 AAFP prescribed credits. Fee: $300/physicians; $150/residents, fellows, allied health professionals. — **June 14–15**

Seventh annual advanced topics in CT with emphasis on spiral CT, sponsored by the department of radiology, Johns Hopkins University School of Medicine at The Eldorado Hotel, Santa Fe, New Mexico. Credits: 16 Cat 1 AMA credits. Fee: $525/physicians; $475/residents, fellows. — **July 22–25**

Johns Hopkins internal medicine board review course, sponsored by the department of medicine, Johns Hopkins Hospital at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 52.5 Cat 1 AMA credits. Fee: $800/physicians (before 5/1); $850 (after 5/1); $750/residents (before 5/1); $800 (after 5/1). — **July 31–Aug. 5**

Women's cancer issues for the generalist, sponsored by the John Hopkins University School of Medicine at Manor Vail Lodge Vail, Colorado. Credits: 6 Cat 1 AMA credits. Fee: $195/physicians, $155/residents, allied health professionals. — **Aug. 6–7**

Fifth annual topics in infectious diseases for primary care, sponsored by the department of medicine, Johns Hopkins University School of Medicine at Eldorado Hotel, Santa Fe, New Mexico. Credits: 15.5 Cat 1 AMA credits. Fee: $500/physicians, $350/residents, fellows, allied health professionals. — **Aug. 8–11**

Perioperative management, sponsored by the Johns Hopkins University School of Medicine at The St. Regis Aspen Hotel, Aspen, Colorado. Credits: 21 Cat 1 AMA credits. Fee: $525/physicians (before 7/16), $550 (after 7/16), $490/residents, fellows, CRNAs, allied health professionals (before 7/16), $515 (after 7/16). — **Aug. 16–19**

Lipid disorders training center programs, basic course, sponsored by Johns Hopkins University School of Medicine and Johns Hopkins Lipid Clinic. Credits: 1 Cat 1 AMA credit. — **Sept. 2–4**

Lipid disorders training center programs, advanced update, sponsored by Johns Hopkins University School of Medicine and Johns Hopkins Lipid Clinic. Credits: 1 Cat 1 AMA credit. — **Sept. 25**

Fifth annual Johns Hopkins hepato-biliary update, sponsored by the departments of medicine and surgery, Johns Hopkins University School of Medicine, at Dunes Manor Hotel, Ocean City, Maryland. Credits: 9 Cat 1 AMA credits. Fee: $350/physicians, $175/residents, fellows, allied health professionals. — **Sept. 25–26**

2nd annual gynecologic pathology: approaches to common problems with emphasis on new entities and techniques, sponsored by the department of pathology, Johns Hopkins University School of Medicine, at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 14 Cat 1 AMA credits. Fee: $500/physicians, $250/residents, fellows, allied health professionals. — **Oct. 29–30**

University of Maryland School of Medicine

For each course, additional information may be obtained by contacting the Program of Continuing Education, University of Maryland School of Medicine, Room 14-011, BRB, 655 W. Baltimore St., Baltimore, MD 21201 (410-706-3956), or by calling the phone number listed after a specific program. Fax 410-706-3103.

Problem solving in diagnostic radiology, sponsored by The University of Maryland at The Homestead 1776, Hot Springs, Virginia. Info: Ryals & Associates, Inc., P.O. Box 1925, Roswell, GA. 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Aug. 12–15**

Medical and surgical retina for the comprehensive ophthalmologist or eyecare specialist, sponsored by University of Maryland School of Medicine in conjunction with the Maryland Center for Eye Care, at BWI Airport Hotel, Baltimore, Maryland. Info: Tina Simmons, (410)328-5934, Fax: (410)328-6346. **Oct. 8**

Miscellaneous

Excellence in diabetes management, sponsored by The Office of Continuing Medical Education, Eric P. Newman Education Center, Washington University Medical Center, 320 South Euclid Avenue, St. Louis, Missouri. Credits: 7.25 Cat 1 AMA credits. Fee: $95. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. **May 15**

27th annual Hans Berger symposium, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus at the Omni Richmond Hotel & MCV Campus, Richmond Virginia. Credits: 13 Cat 1 AMA credits. Fee: $375. Info: Nancie Mervis, (800)413-2872, (804)828-3640, Fax: (804)828-7438. **May 16–18**

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat 1 AMA credits. Fee: $425. Info: Continuing Medical Education, Washington University School of Medicine. (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. **June 9**

23rd annual Williamsburg conference: cognitive, neuromedical & behavioral aspects of brain injury, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus at the Williamsburg Marriott Hotel, Williamsburg, Virginia. Credits: 23 Cat 1 AMA credits. Fee:$425. Info: Nancie Mervis, (800) 413-2872, (804)828-3640, Fax: (804)828-7438. **June 10–13**

ENDO '99 – The Endocrine Society's 81st annual meeting, sponsored by the Endocrine Society, at the San Diego Convention Center, San Diego, California. Info: Susan Koppi, (301)941-0252 or Ellen Yui, (301)270-8571, www.endo-society.org. **June 12–15**

Women's health post grad course, sponsored by the office of Continuing Medical Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus, at Cavalier Resort, Virginia Beach, Virginia. Info: Nancie Mervis, (800)413-2872, (804)828-3640, Fax: (804) 828-7438. **June 25–27**

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat 1 AMA credits. Fee:$425. Info: Continuing Medical Education, Washington University School of Medicine. (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. **July 14**

Miscellaneous (continued)

21st annual pediatrics at the beach primary care conference, sponsored by the Office of Continuing Education, Virginia Commonwealth University, Medial College of Virginia Medical Campus, at Sheraton Oceanfront Hotel, Virginia Beach, Virginia. Credits: 13 Cat 1 AMA credits. Fee: $425. Info: Nancie Mervis, (800)413-2872, (804) 828-3640, Fax: (804)828-7438. **July 16–18**

Diversity in caregiving: exploring possibilities, sponsored by the Alzheimer's Association at the Long Beach Convention Center in Long Beach, California. Info: (312) 335-5790, e-mail: Diane.Stultz@alz.org. **July 18–21**

Breast imaging today and tomorrow, sponsored by the International Institute for Continuing Medical Education, Inc. at the La Fonda Hotel, Santa Fe, New Mexico. Fee: $750/physicians, $550/residents, fellows, mammographers. Info: Ryals & Associates, Inc. P.O.Box 1925, Roswell, GA, 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Aug. 2–5**

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat 1 AMA credits. Fee:$425. Info: Continuing Medical Education, Washington University School of Medicine. (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. **Aug. 11**

The International Skeletal Society annual meeting and course, sponsored by The International Skeletal Society, and the University of California, San Diego at the Westin Hotel, Seattle, Washington. Fee: $750/physicians, $550/residents, fellows, technologists. Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Aug. 18–21**

Imaging in Tuscany, sponsored by The International Institute for Continuing Medical Education, Inc. at the Relais Fattoria Vigwale, Radda in Chianti, Italy. Fee: $895. Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Aug. 30–Sept. 3**

Advanced MR imaging, sponsored by the International Institute for Continuing Medical Education, Inc. at the Hotel InterContinental, Montreal, Quebec, Canada. Fee: $750/physicians, $550/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 3–5**

Echocardiography as a definitive diagnostic modality and therapeutic guide: a case study seminar on interpretation of 2-D, Doppler, TEE, stress echo and contrast, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 20 Cat 1 AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Sept. 16–18**

Magnetic resonance: the contemporary cardiovascular imaging, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 21.5 Cat 1 AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Sept. 23–25**

Internal derangements of joints: advance & intensive MR imaging, sponsored by the International Institute for Continuing Medical Education, Inc., at MGM Grand Hotel, Las Vegas, Nevada. Fee: $750/physicians, $550/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 24–26**

Miscellaneous (continued)

Mammography in Edinburgh, sponsored by the International Institute for Continuing Medical Education, Inc., at the George Intercontinental Hotel, Edinburgh, Scotland. Fee: $895/physicians, $695/residents, fellows, technologists. Info: Ryals & Associates, Inc. P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 27–30**

Breast imaging update, sponsored by the International Institute for Continuing Medical Education, Inc., at the Westin Resort, Hilton Head Island, South Carolina. Fee: $750/physicians, $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., P.O. Box 1925, Roswell, GA 30077-1925. (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 30–Oct. 1**

Management of cardiac arrhythmias in daily practice: featuring case presentations, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 17.0 Cat I AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Oct. 1–6**

Infectious disease '99 board review course, sponsored by The Center for Bio-Medical Communication, at the Ritz Carlton Hotel, Tysons Corner, McLean, Virginia. Credits: 36 Cat 1 AMA credits. Fee: $845/physicians, $645/physicians-in-training (after 7/16/99 — $945 and $745, respectively). Info: Center for Bio-Medical Communications, Inc., (201)342-5300, Fax: (201)342-7555, e-mail: cmeinfo@cbcbiomed.com. **Oct. 6–10**

Contemporary nuclear cardiology: state-of-the-art review, case studies/practical concepts, managed care and latest licensing issues, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 21.5 Cat I AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Oct. 14–16**

Cardiac ascultation for physician assistants, nurse practitioners, and cardiac nurses, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 19.0 Cat I AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Oct. 20–22**

PHYSICIAN'S RECOGNITION AWARD

For the month of March 1999, the physicians listed below received the American Medical Association (AMA) Physician's Recognition Award. Established in 1968, the award's purpose is to encourage physician participation in continuing medical education and to recognize those physicians who have voluntarily completed programs of continuing medical education.

Dara Shhriar Afshar
Sima Habibi Bakalian
Edwin Tatoy Castaneda
Rebecca Davis Elon
Norton Alexander Elson
Robert Wagner Gibson
Timothy Bruce Gilbert
A.M. Gohari
Anne L. Grady
Janice Dolores Johnson
Christie Goeggel Lamping
Richard Sheldon Margolis
Marguerite T.D. Moran
Istvan Nyirjesy
Walter Reams Perkins
William Eddy Randall
James Moore Raver
Peri Michelle Rezai
Peter Howard Rheinstein
Nicholas Louis Rock
Frank Michael Ryan
Giulio Italo Scarzella
Lawrence Peter Shombert
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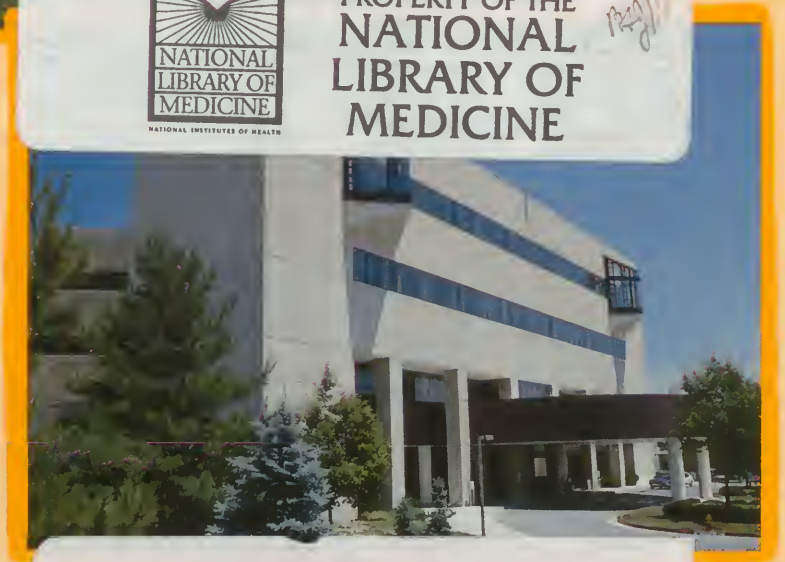
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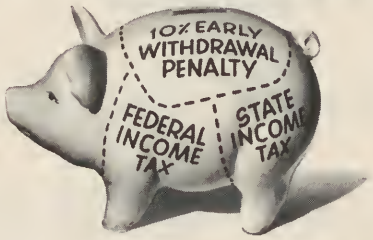
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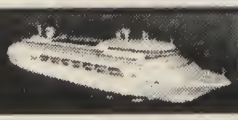
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Guest Editor's Note

It is my pleasure to present this collection of articles from the professional staff at Howard County General Hospital, a member of Johns Hopkins Medicine. This supplemental edition of the *Maryland Medical Journal* commemorates our 25th year serving the Howard County community.

Howard County General Hospital began in 1973 as a 59-bed, short-stay hospital called the Columbia Hospital and Clinics Foundation. It was a joint venture between Johns Hopkins and the company who was funding Columbia's overall development – Connecticut General Life Insurance Company. In 1969, these two entities, working together, created one of the country's first health maintenance organizations to provide health care services with a primary emphasis on prevention and illness. It represented one of James Rouse's initial ideas for Columbia.

The new hospital focused on caring for Columbia Medical Plan enrollees and Columbia residents; however, the rest of Howard County was still in need of an acute-care community hospital. So, within a year, the Columbia Hospital and Clinics Foundation reorganized as Howard County General Hospital, a private, not-for-profit hospital governed by its own board of trustees. Over time, services expanded and the hospital enlarged.

In 1998, after 25 years as an independent institution, Howard County General Hospital searched for a strategic partner. After careful review and consideration of several potential suitors, the hospital's board of trustees chose to align the hospital with Johns Hopkins Medicine, putting us back with our original partner, still growing and looking for ways to serve our community. The professional staff is over 500 physicians and growing. Our hospital, now a 233-bed facility, has a new maternal-child unit, as well as an oncology center and a center for ambulatory surgery.

This supplemental journal reflects the diverse spectrum of conditions and illnesses treated at Howard County and the high level of skill and dedication inherent in our professional staff.

Harry A. Oken, M.D., F.A.C.P.
Guest editor

Dr. Oken is chairman, department of medicine, Howard County General Hospital, and assistant professor of medicine, Johns Hopkins University, and clinical associate professor, University of Maryland School of Medicine. ■

Editor's Note

The *Maryland Medical Journal* wishes to thank the Howard County General Hospital which financed this issue to commemorate its 25th anniversary. We also wish to thank Harry A. Oken, M.D., F. A.C.P., who graciously accepted the responsibility of guest editor and all others at that institution who participated in making this an issue that will be long remembered.

Marion Friedman, M.D.
Editor ■



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The 1999 MedChi Convention will examine topics ranging from genetics to privacy and confidentiality to end-of-life issues. We have gathered speakers who are at the forefront of both the great technological changes overtaking our society and those who struggle to remain ethical in the face of them. Please note the following is a brief excerpt from this year's program (information is subject to change).

Friday, October 15

9:30 - 11:00 House of Delegates

11:00 - noon

Woodward History of Medicine Lecture

Sherwin B. Nuland, MD, author and Clinical Professor, Yale Medical School

12:00 - 1:30

Remembering Our Beginnings

As part of our Bicentennial celebration, Joseph Gagliardi, MD, will impersonate Dr. Dobbs, a colonial period physician. Lunch will be provided.

1:30 - 3:00 Part I

3:30 - 5:00 Part II

Privacy and Confidentiality: Navigating an Ethical Whirlpool

The Honorable Ben Cardin (invited), The Honorable Casper Taylor, Harol Eist, MD, past President of the American Pediatrics Association, and Lawrence Gostin, JD, LLD, Georgetown University School of Law (invited)

6:00 - 8:00

Cocktail Reception

Saturday, October 16

7:30 - 9:00

Comprehensive Financial Planning

9:00 - 11:00 Part I

11:30 - 12:30 Part II

Recreating Ourselves: Ethical Ramifications of Genetic Research

Jeremy Rifkin, author, activist and philosopher, J. Craig Venter, PhD, President & Director, The Institute for Genomic Research

Saturday, October 16 *(cont.)*

12:30 - 2:00

Fraud and Abuse Compliance Luncheon

2:00 - 5:00 ***House of Delegates Meeting***

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3:30 - 4:30 ***Concurrent Breakout Sessions***

7:00 - midnight

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Enjoy an evening of cocktails, dinner and dancing! Tickets are $50/person.

Sunday, October 17

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Swallow syncope

Andrew Farb, M.D., and Stephen A. Valenti, M.D.

From the division of cardiology, department of internal medicine, Howard County General Hospital, Columbia, Maryland. Dr. Farb is a clinical cardiologist and a cardiovascular pathologist at the Armed Forces Institute of Pathology, Washington, DC. Dr. Valenti is a clinical cardiologist and associate medical director of the Central Maryland Heart Center and Cardiac Catheterization Laboratory in Howard County.

ABSTRACT: *Swallowing (or deglutition) syncope is an uncommon, vagally-mediated etiology for syncope that may be seen in children and adults. The mechanism of syncope involves afferent impulses from the upper gastrointestinal tract and efferent impulses to the heart that can produce a variety of bradyarrhythmias with atrioventricular block. Two cases of swallow syncope are reported, one associated with drinking a cold carbonated beverage, and the other precipitated by eating a large bolus of food (which we have termed "Vaso-Bagel" syncope). In evaluating patients with syncope, a history of a temporal relationship to eating or drinking should be sought. While changes in eating habits may be effective in some cases, permanent pacemaker placement is often indicated and is curative.*

Among the many causes of syncope, swallow or deglutition syncope is an uncommon cause of cardiogenic syncope. Episodes of lightheadedness or syncope are caused by a vagally-mediated reflex, which may occur in the presence or absence of underlying esophageal or cardiac disease. There have been less than 50 cases of swallow syncope reported in the literature to date. Despite its rarity, recognition of swallow syncope in clinical practice is important, as episodes are often recurrent and can result in patient injury via falls. Effective treatment is available, making diagnosis of this entity worthwhile.

Reprints: *Andrew Farb, M.D.*
11085 Little Patuxent Parkway
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Case reports

Case 1. ("Pepsi® Challenge") A 57-year-old man was referred for evaluation of syncope. The patient had been in good health except for smoking and hypercholesterolemia. He reported four syncopal episodes and one presyncopal episode over the previous six years. Syncope occurred without preceding symptoms, and his presyncopal episode was preceded by dizziness. These episodes occurred while drinking cold carbonated beverages, eating a sandwich, or eating other solid foods, and were related to the sensation of a need to burp. Several of the episodes were witnessed, and on one occasion, he fell out of a chair, struck his head, and suffered a closed-head injury. His gastrointestinal history was notable for the use of ranitidine for a "spastic stomach." Physical examination was normal except for a grade I/VI systolic ejection murmur. Echo-Doppler revealed minimal mitral valve prolapse and mild aortic valvular sclerosis. A thallium cardiac stress test was normal.

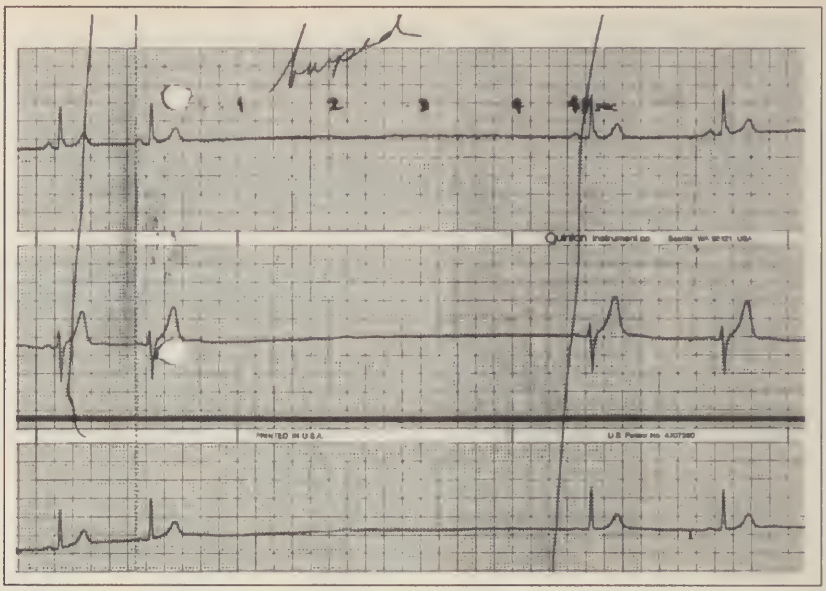


FIGURE 1. Electrocardiogram immediately following ingestion of a carbonated cola beverage (Case 1). The patient had a 4.8-second sinus pause followed by an urge to burp.

Carotid sinus massage and Valsalva maneuvers were performed at a follow-up office visit before and after the patient had swallowed one cold 16-ounce carbonated cola drink. Blood pressure and heart rate remained stable during these maneuvers with heart rate slowing to 50 BPM during the swallowing, and slowing to 60 BPM during carotid sinus massage. There was a 1.4-second pause after swallowing Pepsi®, when the patient had the urge to burp. He returned to the office in the afternoon for further monitoring during solid food consumption (i.e., chicken sandwich) as well as another carbonated cola beverage. During these maneuvers, the patient was noted to have a 2.4 second asystolic/sinus pause, followed first by a 4.8 second pause and then the urge to burp (**Figure 1**). During these pauses the patient experienced dizziness. Sinus slowing occurred for several beats before his 2.4-second pause with mild PR prolongation noted before the QRS complex, before and after the pause. No significant sinus slowing occurred before the 4.8-second pause.

The remainder of the patient's evaluation demonstrated marked gastrocsophageal reflux on an upper gastrointestinal series. Gallbladder sonography was normal. The patient subsequently underwent placement of a VVIR pacemaker. Following pacemaker placement, he had no further syncopal or presyncopal episodes.

Case 2. ("Vaso-Bagel" syncope). A 62-year-old man was seen for general cardiovascular evaluation. He was seen in the emergency department approximately three years earlier for evaluation of a syncopal episode that had occurred while eating a bagel. He reported fleeting dizziness just before his syncopal episode. He was not aware of any other associated symptoms preceding or subsequent to the syncope. When he regained consciousness, he felt perfectly normal. No seizure activity was noted.

Cardiac evaluation at that time was negative, and a cardiac stress test was normal. A Holter monitor revealed a brief asymptomatic episode of 2:1 atrioventricular block during a bowel movement. The patient had reported a similar episode of presyncope/syncope approximately seven years earlier while eating a cheeseburger on a hot day. The patient admitted that he did not chew his food well and tended to take very large bites. There was no history of dysphagia or other gastrointestinal symptoms. Physical examination was normal at the time of his office visit except for a I/VI systolic ejection murmur, and an ECG was normal. A dual isotope cardiac stress test was normal, and an echocardiogram was unremarkable except for mild mitral regurgitation.

Because of the patient's previous syncopal episodes and prior atrioventricular block, a Holter monitor was performed, which demonstrated sinus rhythm with episodes of Mobitz I second degree, 2:1, 3:1, and 4:1 atrioventricular block. The longest pause was 3.3 seconds. During these episodes, sinus slowing also occurred with sinus bradycardia to rates as slow as 33. The patient's episodes of high-grade atrioventricular block occurred while eating a bagel in the morning (**Figure 2**) and while eating lunch in the afternoon. There was no syncope and the patient did not report lightheadedness.

The patient was advised to eat more slowly, take smaller bites, and chew his food well before swallowing. After he instituted these recommendations, there was no recurrence of atrioventricular block on a follow-up Holter monitor. No subsequent episodes of syncope have occurred.

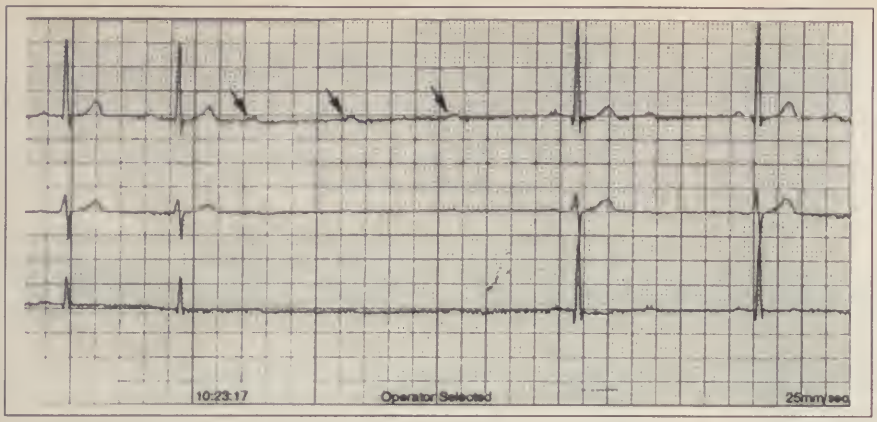


FIGURE 2. Holter monitor recording during ingestion of a bagel and coffee (Case 2). Complete atrioventricular block is shown (arrows, non-conducted P waves) resulting in a 3.3 second pause.

Discussion

Swallowing syncope, a vagally-mediated etiology for syncope, is included amongst the situational syncope syndromes that include micturition syncope, defecation syncope, and cough syncope. A variety of bradyarrhythmias have been described in swallowing syncope with atrioventricular block being most often reported; less frequently, sinus bradycardia, sinoatrial block, and complete atrial and ventricular asystole have been observed. The marked bradyarrhythmia leads to hypotension, cerebral hypoperfusion, and subsequent syncope.[1,2] Other cardiac arrhythmias such as sinus tachycardia, ectopic atrial tachycardia, supraventricular tachycardia, paroxysmal atrial fibrillation, and ventricular arrhythmias have been rarely associated with swallowing,[2,3] but do not typically result in syncope.

The mechanism of swallow syncope involves the autonomic nervous system innervation of the esophagus and heart via the vagus nerve.[4] At the esophagus, afferent impulses from esophageal plexus travel via both the left and right vagus nerves to brainstem; from the brainstem, efferent impulses reach the sinoatrial node (via the right vagus nerve) and the atrioventricular node at the level of the bundle of His (via the left vagus nerve).[5,6] Efferent signals appear to have a greater effect on the sinoatrial node than the atrioventricular node.[7] These efferent impulses lead to sinus bradycardia with varying degrees of atrioventricular block resulting in hypotension.[8] A primary vasodepressor component in the mechanism of hypotension has not been reported. Less commonly, the afferent arm involved in swallow syncope arises from the glossopharyngeal nerve secondary to pharyngeal irritation.[9]

The first autopsy report of swallow syncope dates back to 1793.[10] Most early published cases of swallow syncope have been associated with underlying esophageal disease including esophageal spasm, achalasia, esophageal diverticulum, esophageal stricture, esophageal cancer, and hiatal hernia.[2,3,7,11] Swallow syncope has been observed in the absence of esophageal disease[6,8] and has occurred in the setting of cardiac conditions such as inferior wall myocardial infarction, rheumatic myocarditis, aortic valve calcification extending into the crest of the interventricular septum and interrupting the His bundle, and swallow-induced syncope in the absence of structural heart disease.[1,8,12]

Swallow syncope may occur in all age groups, including children and the elderly. The youngest person reported was a 5-year-old girl with episodes of loss of consciousness during eating since age 2, incorrectly diagnosed as epileptic seizures.[9] Pharyngeal application of a tongue depressor produced prolongation of the PR interval followed by complete atrioventricular block and 14 seconds of asystole, 3 ventricular escape beats, followed by 2:1 atrioventricular block. Syncope may be associated only with eating solid food,[13] only with drinking liquids,[6] or ingesting both solids and liquids.[4,7,14] Even nonvigorous swallowing or swallowing small volumes can produce symptoms in susceptible persons.[1,15] A familial pattern of swallow syncope has been reported.[13] High degree atrioventricular block with eating solids or liquids without resultant syncope has been documented.[4]

The clinical evaluation of a patient with suspected swallow syncope involves a careful history of the temporal relationship of food or liquid ingestion and swallowing to lightheadedness or syncope. Provocative testing of eating and/or drinking during electrocardiography (to document the occurrence of bradyarrhythmias) and blood pressure monitoring should be performed. Pretreatment with atropine should prevent the bradyarrhythmia(s) and hypotension and confirm the diagnosis. A work-up of possible associated functional or structural esophageal pathology is recommended. In patients with swallow syncope, caution should be exercised during intubation, instrumentation of pharynx and esophagus, or procedures that may produce gastric distention.

In treating patients with swallow syncope, atrioventricular node blocking agents should be discontinued. In the appropriate clinical setting, esophageal pathology (e.g., strictures and spasm) should be treated.[2] To prevent bradyarrhythmia, anticholinergic medications such as scopolamine and Pro-Banthine have been tried,[6,14] but they have not been successful for long-term therapy. In patients with infrequent symptoms, in whom syncope is associated with swallowing of large boluses of food

or liquids, behavioral modification (smaller, well-chewed bites) may be successful as demonstrated in Case 2 in the present report. For most patients, however, placement of a permanent pacemaker is indicated and curative.[6-8, 14]

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Enhanced external counter pulsation: the Howard County experience in the first 18 patients

Sean Gloth, M.D., and Harry A. Oken, M.D.

ABSTRACT: *Enhanced external counter pulsation is a non-invasive therapy that uses sequentially inflated pneumatic cuffs on the lower extremities to enhance coronary artery diastolic flow and decrease left ventricular afterload. We studied its effect on 18 patients with persistent angina despite maximal medical, surgical and catheter-based interventions. After enhanced external counter pulsation all subjects improved their functional class. Treatment with enhanced external counter pulsation improved functional class significantly from baseline 3.1 ± 0.6 to 1.6 ± 0.5 ($p<.001$). These results are consistent with the national experience. Growing physician awareness, recent Medicare approval status, and subsequent reimbursement will hopefully increase the use of this therapy.*

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Background

Coronary artery diastolic augmentation was described by Kantrowitz and Kantrowitz at the Massachusetts Institute of Technology in 1953. These investigators correctly proposed that increased diastolic coronary perfusion pressure would result in increased coronary blood flow. In addition, Sarnof demonstrated that left ventricular work and myocardial oxygen consumption depend directly on end diastolic pressure.[1] William Birtwell, an electrical engineer, developed an early intravascular arterial pulsator, which drew off blood during systole and returned it during diastole. Richard Gorlin, M.D., named this technique counterpulsation.

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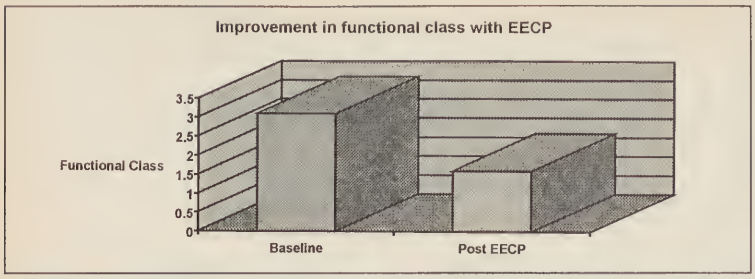


FIGURE 1. Improvement in functional class after treatment with EECP.™

The intraaortic balloon pump is the modern counterpulsation technique most familiar to the medical community. It is an intravascular device that inflates a balloon in the aorta during diastole and deflates it during systole. This both increases diastolic coronary perfusion and decreases impedance to cardiac output.[1]

Less familiar to the medical community is the modern external counter pulsation device. In 1995, the FDA approved a pneumatic external counterpulsation device (Vasomedical, Inc., U.S.) known as enhanced external counterpulsation (EECP™). EECP™ uses equipment designed to inflate and deflate three sets of pneumatic cuffs positioned on the patient's lower extremities. The cuffs inflate sequentially from the calves to the buttocks in diastole and deflate simultaneously just before systole.

The hemodynamic effects of EECP™ are multiple and continue to be evaluated. Using finger plethysmography it has been demonstrated that the systolic pressure wave diminishes and the diastolic pressure wave significantly increases and becomes higher than the systolic wave. Left main coronary blood flow measured with transesophageal echocardiography has been shown to increase significantly up to 42% during EECP™.[3] Tc 99 MIBI scans performed before and after EECP™ have demonstrated improved perfusion both at rest and exercise.[3] Angiographic studies suggest that EECP™ may increase or improve collateral blood flow.[4]

The present study was performed to evaluate functional class change in a group of patients with chronic stable angina treated with EECP™.

Methods

Howard County General Hospital became the first regional center in Maryland for use of EECP™ in 1997. Since that time 24 patients (19 men, 5 women) have been enrolled. The patients' ages ranged from 45 to 93 years with a mean age of 65 years. Twenty-three patients had prior angioplasty or stenting and 16 patients had prior CABG. One patient had neither catheter-based intervention nor CABG.

Patients with chronic exertional angina, demonstrated by exercise testing or thallium perfusion studies, and with optimal medical and surgical therapy were enrolled. Specific exclusion criteria were: clinical congestive heart failure, severe aortic insufficiency, myocardial infarction within three months, severe peripheral vascular disease, recurrent deep vein thrombosis, and bleeding diatheses. Patients with atrial fibrillation and/or pacemakers were excluded.

Prior to enrollment in EECP™, the patients were assigned a functional class I-IV as defined by the Canadian Cardiovascular Society. Patients continued their current medical regimens. Patients underwent EECP for a total of 35 hours with a one-hour daily treatment.

Statistical analysis

Effects of EECP™ were assessed by paired T test. A probability value less than .05 was considered significant. Data are expressed as mean +/- SEM.

Results

After EECP™ all subjects improved their functional class. Treatment with EECP improved functional class significantly from baseline 3.1±0.6 to 1.6±0.5 ($p<.001$) (**Figure 1**). The most improvement was seen from functional class IV to II in one subject only. There were no adverse effects with treatment.

Discussion

This first experience with EECP™ at Howard County General Hospital demonstrates the significant quality of life improvement that has been demonstrated in prior studies and the MUST-EECP trial. EECP is continuing to demonstrate measurable physiologic benefit with decreased ischemic burden, improved coronary blood flow, and enhanced diastolic coronary flow. In addition, remarkable clinical benefit has been demonstrated with improved exercise tolerable and functional class. As with other proven therapies, the greatest concern with EECP™ remains underutilization. With the recent Medicare approval status, the financial burden to the patient will be reduced. Hopefully this financial change and increased physician awareness will allow this population, suffering from ischemia, greater access to EECP™ and improved quality of life.

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Carotid endarterectomy in a community hospital setting: a three-year experience

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ABSTRACT: *The need for all medical institutions that treat carotid artery occlusive disease to continuously monitor their surgical experience is quite evident. Nonetheless, a national survey in 1995 found that only 15% of physicians reported knowing the perioperative stroke rate at the hospitals where they perform or refer patients for carotid endarterectomy.[1] Neurologic morbidity related to the performance of carotid endarterectomy has been continuously monitored at Howard County General Hospital for the past decade, but the true significance of this data could not be appreciated without a more comprehensive analysis of the clinical experience. The present study was undertaken with the intent of providing this information.*

Methods

The areas of information surveyed included the indications for surgery, patient age and associated medical conditions, methods of diagnostic evaluation, certain details of the operative procedure, outcomes of neurologic morbidity, and 30-day perioperative mortality. All cases of carotid endarterectomy for the review period were identified by retrieval of computerized operating room records. Retrospective chart review for all procedures was performed, supplemented in some instances by review of outpatient records and verbal follow-up reports by treating physicians.

Basic principles

The rationale for carotid endarterectomy is stroke prevention. The three categories of patients presenting for treatment are those with asymptomatic stenoses, those who have sustained transient attacks of cerebral ischemia without neurologic sequelae, and those who have sustained completed strokes. The rationale and timing of surgery for this last category of patients will be discussed below. In the Howard County General Hospital experience, all patients were evaluated by clinical history and physical examination and by varying combinations of Duplex ultrasound scanning, MR angiograms, and conventional angiograms. All endarterectomies in the study were performed under general anesthesia. The operation was performed using the standard techniques of plaque mobilization and excision. Use of an indwelling shunt for cerebral protection and use of a patch angioplasty for closure of the carotid artery were based on surgical judgment and preference.

Results

During the study period, January 1, 1996, through December 31, 1998, 141 carotid endarterectomies were performed in 125 patients. Sixteen patients underwent bilateral, staged endarterectomies. Each of these was evaluated as an independent event. Fifty-five of the 125 patients were male (44%) and 70 were female (56%). The oldest patient was 90; the youngest patient was 45. The largest single group of patients fell into the 71- to 80-year-old bracket (60 patients or 48% of the total patient population) (**Table 1**).

Seventy-two of the 141 carotid endarterectomies (51%) were performed for asymptomatic disease. Within this group 94% had stenoses greater than 70%, 85% had stenoses greater than 80%, and 44% had stenoses greater than 90%. Only one case was performed for a stenosis less than 60%, and in that case, the stenosis was associated with an ulcerated plaque.

TABLE 1. Patient age

<50	6	4%
51-60	22	18%
61-70	31	25%
71-80	60	48%
81-90	6	5%
>90	0	
Total	125	

Forty-seven of the 141 endarterectomies (33%) were performed for transient ischemic cerebral attacks.

Twenty-two of the 141 endarterectomies (16%) were performed for patients who had sustained completed strokes. In all of these cases the neurologic disability was minimal to mild and all of the patients were felt to be at great functional jeopardy from additional strokes. Patients who had sustained incapacitating strokes were not felt to be appropriate candidates for carotid evaluation or surgery.

Carotid endarterectomy has traditionally been delayed for four to six weeks after the onset of stroke based on reports from the 1960s, which suggested poor outcomes when the operation was done earlier. Recent studies, however, suggest that the standard four to six week delay will put patients at a 4.9% to 21% risk of cerebral reinfarction. Moreover, early surgery does not increase the risk of perioperative morbidity.[2] Four of the 22 patients in the present study underwent carotid endarterectomy within 1 to 2 weeks of the stroke. None of these patients sustained perioperative neurologic morbidity.

For the entire group of patients, hypertension was the most commonly associated medical condition, involving 112 of 125 patients (90%) (**Table 2**). Seventy patients (56%) were identified as smokers; 37 patients (30%) were diabetic.

Duplex ultrasound scanning was performed in 128 of the targeted carotid arteries (91%), 2D and 3D time-of-flight MR angiography in 83 (59%), and conventional arteriograms in 40 (28%). Close to 90% of the patient population underwent some combination of these diagnostic studies, the most common combination being Duplex scanning and MR angiogram. Of the patients undergoing a combination of diagnostic modalities, a discrepancy in the estimate of stenosis of greater than 10% was identified in only 5%. For all modalities, stenoses were determined by NASCET criteria, which compares the diameter of the internal carotid artery at the point of maximum narrowing to the diameter of the normal artery distal to the stenosis.[3]

In 20 of the 141 targeted arteries (14%), the Duplex scan was the only diagnostic modality employed, with an even split in this group between symptomatic and asymptomatic patients.

During the study period all cases were performed under general anesthesia. An internal shunt was used in 43 of the cases (61%). Shunting was routine or selective and was a question of surgeon preference and judgment. Patch angioplasty of the endarterectomized artery was performed in 41 of the cases (31%). Collagen-impregnated Dacron was the most commonly used patch material. Use of a patch was judgmental; the major indication for use was in those situations where it was judged that primary closure of the internal carotid artery would result in narrowing.

Neurologic morbidity occurred in 5 of the 141 procedures (3.5%); 1 of 72 (1.4%) for asymptomatic patients, 4 of 69 (5. 8%) for symptomatic patients. Transient marginal mandibular, or hypoglossal nerve dysfunction, was seen in a small num-

ber of patients because of retraction pressure at the time of surgery. All resolved and these were not felt to represent clinically significant events.

A brief account of the morbidities is instructive. Endarterectomy with a shunt and primary closure of the artery was performed in a 74-year-old male with a history of multiple TIAs and a 70% left internal carotid stenosis. Slight posterior angulation of the artery was noted at the completion of the endarterectomy with a diminished pulse. Operative angiogram indicated a significant stenosis at the site of angulation; the endarterectomy was reopened. A fibrin plug was identified on the posterior wall of the artery and the probability of plug embolization was entertained. Shunt was reinserted and a patch angioplasty was performed with an excellent functional result. The patient had a severe speech dysarthria post-operatively; over the ensuing year considerable improvement had taken place.

An 82-year-old female with two prior right hemispheric CVAs underwent carotid endarterectomy for a greater than 90% stenosis of the right internal carotid artery. The lower end of an internal shunt could not be successfully seated within the common carotid artery because of dissection of the shunt tip within the carotid plaque. Endarterectomy with patch angioplasty had to be performed without shunt protection; the patient sustained a major right hemispheric CVA.

A 71-year-old male underwent carotid endarterectomy for right hemispheric TIAs and a greater than 90% stenosis of the right internal carotid artery. The opposite carotid was totally occluded. Endarterectomy was performed with the use of an internal shunt and patch angioplasty. Post-operatively, the patient had mild paresis of the left forearm and hand; both completely resolved within several months.

A 55-year-old male presented with hemispheric TIAs secondary to a greater than 90% stenosis of the right internal carotid artery with a very irregular plaque. Carotid endarterectomy was performed without shunt or patch. The patient was neurologically intact after the procedure, but developed mild left hemiparesis and ocular neglect six hours post-operatively. Duplex scan showed absence of flow in the endarterectomized artery. The patient was stable and no further interventions were carried out. At one-year follow-up the patient's activity is normal and paresis has totally resolved. There is a visual field defect to right lateral gaze.

A 60-year-old male was followed for several years for progression of an asymptomatic right carotid stenosis to greater than 70%. Endarterectomy was performed with the use of a shunt and a PTFE patch. Paresis of the right arm developed in the operating room several minutes after extubation. The patient was re-explored and operative angiogram showed debris at the endarterectomy site. The artery was opened and thrombus was found to be adherent to the patch. Thrombectomy and urokinase infusion were performed. A completion angiogram was normal. Post-operatively the patient had right facial and hand paresis and a speech dysarthria but made a complete recovery.

There was a single perioperative death, which was attributed to an acute myocardial infarction. A 63-year-old male with bilateral greater than 80% asymptomatic stenoses underwent right carotid endarterectomy without incident and returned nine weeks later for endarterectomy of the opposite side. The patient was intermittently hypotensive during the procedure but was alert and neurologically intact at the time of extubation. Several minutes later hypotension and bradycardia developed, rapidly progressing to cardiovascular arrest.

Discussion

The efficacy of carotid endarterectomy in preventing stroke in selected patients with high-grade stenoses of the extra-cranial carotid artery has been established through a series of randomized, controlled clinical trials.[3,4] The benefit of the operation in symptomatic patients has been beyond dispute for years.[4]

The two most significant issues related to the performance of carotid endarterectomy are the indications for surgery in asymptomatic patients and the stroke morbidity and perioperative mortality related to the operation. The ACAS study established a 60% internal carotid artery stenosis as a statistically significant threshold for which endarterectomy could be considered beneficial.[4] A consensus is evolving, however, that a 75% to 80% stenosis is probably more reflective of the number of patients who would benefit from the operation. This present study is encouraging because 94% of patients undergoing surgery for asymptomatic disease had stenoses of greater than 70% and 85% had stenoses of greater than 80%.

Historically, morbidity and mortality results have varied

TABLE 2. Associated medical conditions*

Hypertension	112	90%
Smoking	70	56%
Diabetes	37	30%
Previous MI	35	28%
Coronary Bypass/Angioplasty	27	22%
Peripheral Artery Bypass	10	8%

*125 patients

widely, and one review showed a range of neurologic morbidity from 2.5% to 12.7%.[7] A survey of 9,918 carotid endarterectomies performed in Maryland from 1990 through 1995 revealed a 6.1% neurologic morbidity in low volume hospitals and 1.8% morbidity in high volume hospitals.[8] A recent review suggests that any benefit in stroke reduction as a result of carotid endarterectomy is lost if the combined stroke and death rates are considerably in excess of 3% for asymptomatic patients and considerably in excess of 6% for symptomatic patients.[5]

The brief description of the cases resulting in neurologic morbidity is informative because this information is rarely provided in papers that deal with carotid endarterectomy; the cases illustrate the types of problems that can arise during and after the performance of this operation. It is instructive that a problem which resulted in neurologic morbidity was recognized at the time of the operation in 3 of 5 cases; adjunctive use of intraoperative angiogram was of significant value in two of the cases.

The results of this survey reveal that the indications and outcomes for carotid endarterectomy at Howard County General Hospital fell within nationally recognized standards and guidelines.

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Laparoscopic spinal fusion

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ABSTRACT: *We have reviewed the history of laparoscopic fusions and our results over the past two years, utilizing a femoral ring allograft and bone graft in 51 patients. The rate of fusion in this series is nearly 100%, with relief of radicular pain in about 90%. The average hospital stay is approximately two days and return to work is about six weeks. Minimally invasive techniques for spinal surgery will evolve with time and will become the standard of care in the near future.*

Extraordinary advances have been made in abdominal laparoscopic surgery in the fields of general, urologic, thoracic, and gynecologic surgery. Where these techniques have been successfully applied, great savings have been made in cost and length of hospital stay. Decreases in morbidity, with earlier return to function and improved cosmesis, have been realized with a substantially quicker return to work and normal daily life.

The original concept of a fusion cage was developed and published in 1988 by Dr. George Bagby for use in horses with cervical spondylosis.[1] It was further adapted by Dr. Steven Kuslich and Dr. Bagby for use in humans and manufactured in its current form, the BAK device. Kuslich et al.[2] reported the two-year results of a prospective, multicenter trial demonstrating the efficacy of the fusion cage concept. Since that time, instrumented open fusion using the BAK and similar devices has blossomed. In the last few years, there has been an explosion in the interest for laparoscopically assisted spinal fusions. Zucherman and Zdeblick et al. were the first to perform instrumented interbody fusion of the spine laparoscopically. These procedures, performed at different centers, were done in October 1993. Regan

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et al.[3] favorably compared the laparoscopic and open approach for the BAK device in 1996.

The first reported laparoscopic lumbar discectomy was performed by T.G. Obenchain in 1991.[4] He and Cloyd reported a series of their first 21 cases in 1994.[5] Stein and Slotman developed a midline laparoscopic approach for dissectomy.[6] Matthews et al.[7] reported a series of five patients who had uninstrumented laparoscopic anterior fusion with a follow-up period of six months or longer. Sachs and Schwaitzberg reported on their two cases with uninstrumented laparoscopic fusions at L5-S1.[8] Novotney et al.[9] reported their experience with eight noninstrumented laparoscopic fusions at the same meeting.

There are two laparoscopic approaches to the lumbar spine. The first approach to be used and popularized was the transperitoneal approach utilizing CO_2 gas insufflation for pneumoperitoneum. This technique allows ready access to the L5-S1 area, and with some difficulty, to the L4-L5 disc. Higher levels are relatively inaccessible secondary to the position of the colon and great vessels.[10] Zucherman and Zdeblick et al.[11] reported on 17 consecutive patients who underwent laparoscopic fusions involving the L4-SI levels. Average hospital stay was two days, excluding two patients who had complications and prolonged stays. Regan and Aronoff recently reported on their experience for interbody fusion at L4-L5.[12] Both papers reported significant technical difficulties with the L4-L5 level, with increased operative times and bleeding from vessel mobilization.

The second laparoscopic approach to the lumbar spine is a balloon-assisted gasless retroperitoneal technique. This newer technique evolved with the development of a balloon for retroperitoneal dissection by Gaur.[13] Thalgott et al. refined the technique and applied retroperitoneoscopy to the lumbar spine.[14] In 1996, he reported similar blood loss, hospital stay, and complications but with access (decreased operative time) using fewer incisions to the lumbar spine, from L2-S1. Since then, Henry et al.,[10] McAfee and Regan,[15] and Le Huec et al.[16] have reported variations to the retroperitoneal approach to the lumbar spine. Both approaches are technically challenging, have a steep learning curve, and require extensive knowledge of the retroperitoneal area and lumbar spine.

Materials and methods

Using a minor modification of Thalgott's two-incision technique, we have performed over 50 balloon-assisted endoscopic retroperitoneal gasless (BERG) lumbar discectomies and fusions of the lumbar spine, extending from L2 to S1. We have extensive training in the anterior approaches to the lumbar spine and perform our own balloon-assisted laparoscopic approaches to the lumbar spine. The BERG, or gasless approach, is clearly superior to the transperitoneal approach, even at L5-S1. The most prominent drawback of a transperitoneal or transabdominal approach is the need to retract small bowel for spinal access. Bowel control is accomplished by various maneuvers, including placement of the patient in a Trendelenburg position, displacement of bowel loops using multiple graspers, and, in some cases, suspension of prominent bowel segments to the abdominal side wall via suture tacking of associated mesentery.

In the transabdominal approach, a peritoneal incision is necessary to perform anterior discectomy and fusion. Electrocautery use in this location may lead to retrograde ejaculation. Peritoneal incision also exposes the patient to the possibility of postoperative adhesion formation; this occurrence is increased by bowel manipulation. The use of pneumoperitoneum during laparoscopic spinal surgery also exposes the patient to measurable risks.[17–19] In the event of vascular injury, application of sufficient suction aspiration to isolate the source of bleeding may be difficult, as loss of pneumoperitoneum and associated surgical exposure may occur. Also, the threat of gas embolism must be considered upon vascular entry. Physiologic effects of gas insufflation include cardiovascular and pulmonary compromise as a result of positive intraabdominal pressure and the Trendelenburg position. The potential for acidosis and hypercarbia increases with lengthened laparoscopic operative procedures.

The retroperitoneal approach avoids these pitfalls, uses fewer incisions, and allows greater access to the entire lumbar spine (L2-S1). The peritoneal membrane is used as a bowel retractor, simplifying the process of surgical exposure. Use of a mechanical lift to support the dissected extraperitoneal cavity allows for the application of conventional spine instrumentation, mimicking traditional open techniques. This is in contrast to endoscopic procedures performed under gas insufflation, which require special instruments compatible with gas sealing trocar ports. Enhanced surgical control is achieved with the use of standard open surgical instruments in a gasless approach. The initial learning curve and subsequent operative time may potentially be shortened using BERG lumbar discectomy and fusion.

Results

Overall, 77 levels were fused in 51 patients. Twenty-eight patients had only a single-level fusion: one at L2-L3, two at L3-L4, fifteen at L4-L5, and ten at L5-S1. Three patients had three-level fusions. Twenty patients had fusions involving both L4-L5 and L5-S1. The two-level fusions had an average blood loss of 340 cc and an operative time of 210 minutes. The average blood loss and operative time for single-level fusions were 267 cc and 162 minutes, respectively.

The first 10 patients had fusions over 15 levels and averaged 480 cc estimated blood loss (EBL) and 278 minutes operative time. The last 10 patients had fusions over 13 levels and averaged 139 cc EBL and 132 minutes operative time. Of the 35 single-level fusions, the first five patients had an average EBL of 320 cc with an operative time of 257 minutes. The middle five patients with single-level fusions had an average EBL of 170 cc with an operative time of 139 minutes. The last five patients with single-level fusions had an average EBL of 160 cc with an average operative time of 113 minutes.

Initially, we utilized titanium interbody cases, but abandoned this because of the high rate of failure from the cages. One cage subsided and two cages migrated during the first three postoperative months requiring revision surgery. Since that time we have utilized femoral ring allografts with autogenous iliac crest bone graft and interference screw fixation. Of these 51 patients, 35 have been followed for greater than 6 months (8 to 26 months, mean 17 months).

In the 35 patients followed greater than six months, we have had one nonunion and two delayed unions (based on x-rays and relief of back pain). The allograft allows for indirect decompression in cases of foraminal stenosis and direct decompression in cases of spondylolisthesis and bulging/central disc herniations. Disc heights are increased almost 50%, and in cases of postlaminectomy syndrome with epidural fibrosis, posterior redo decompression was performed in four patients (two with cages, two with allografts). We have not had problems with the ilioinguinal and genitofemoral nerves reported by Regan.[20] Furthermore, we have not had to supplement the allograft and interference screw fixation with posterior stabilization. Though our rates of fusion are excellent, our ability to relieve radicular pain in cases of epidural scarring and moderate stenosis is about 90%.

Twenty-two of 35 patients were working at the time of surgery and at the time of the last follow-up all patients had returned to their previous level of employment. Two patients, one retired and another disabled from back pain, returned to work as well. One patient with a three-level fusion for discogenic back pain, who was disabled before surgery, is unchanged. The average return to work is seven weeks. Eighty-six percent of patients went back to work within six weeks; two worker's compensation cases went back to work at three months and six months, respectively.

Before surgery, 34 of 35 patients were using narcotics for pain relief regularly (more than twice a day). Only two of these patients use narcotics regularly now (one patient who underwent a three-level fusion for discogenic pain, a chronic patient with an infusion pump who continues to use this postop, and one who has radicular pain and pending redo posterior decompression). Ninety-four percent of patients either use NSAIDs or class III narcotics rarely (less than once a week). Ninety-one percent of patients are very happy with the results of surgery; one patient is improved but only somewhat happy with surgery (patient with the vein tear); and two patients are unchanged from surgery. Thirty-three of 35 (94%) patients report almost complete resolution of back pain. Eighty-eight percent of patients reported relief of radicular pain immediately postop. Three patients required redo posterior decompression for epidural fibrosis and are now without radicular pain as well. Overall, there is a 97% rate of relief of radicular pain.

Complications

Our complication rates are similar to those reported by McAfee, Regan, Zdeblick, and Zucherman.[21] We have performed 51 laparoscopic fusions and have 11 complications in 5 patients. Two patients account for almost 70% of the complications (7 of 11 complications). One patient had a left common iliac vein laceration with conversion to open for hemostasis. This same patient developed a DVT and pneumonia during her recovery. She was the only patient who required blood transfusions. There were two patients who had segmental vein tears (at L4-L5) that were repaired endoscopically. One of these patients had temporary L5 nerve root irritation (lasting two weeks), developed a left heel blister from inadequate heel protection, and also developed cellulitis of the lateral incision requiring 10 days of oral antibiotics. Our first patient developed pneumonia (prolonged operative time of 345 minutes). Our fourth patient developed retrograde ejaculation that has not resolved to date (18 months). Our fifth patient has a left lower leg warmth (sympathectomy) from mobilization of the sympathetic chain at L4-L5. Six of our complications occurred in our first 15 patients; and four complications occurred in one patient (our second laparoscopic case at a secondary hospital). In four patients, peritoneal perforation during dissection was observed and repaired laparoscopically allowing for the subsequent spinal procedure.

Summary

Laparoscopic dissectomy and spinal fusion seeks to decrease the morbidity of open spine surgery by minimizing the tissue damage and dissection needed for fusions. It avoids the muscle stripping during posterior fusion surgery, which leads to postoperative muscle fibrosis and weakness or fusion disease.[22] The return to work and normal activities of daily living is two-to-four fold quicker than with conventional fusions. Our average return to work is six weeks, and by the second week, patients begin low impact exercises. The average length of stay is two days; most patients have minimal to no back or abdominal pain

by the end of the first week. Patients use a corset for the first six weeks. The most significant complaint is pain from the iliac crest bone graft harvest site. By six weeks, most patients use mild narcotic agents occasionally, and by three months, most patients use nonnarcotic agents occasionally.

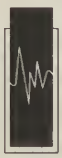
Our experience to date with the BERG approach demonstrates its feasibility and flexibility in accommodating a variety of surgical situations. Comparison with other endoscopic techniques (both transperitoneal and extraperitoneal) reveals fewer complication rates but similar blood loss and operative time. There is a significant learning curve to this technically challenging procedure. Operative times and blood loss decrease with experience and with fewer levels fused.

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Ultrasonic assisted liposuction

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ABSTRACT: *Ultrasonic assisted liposuction is a new and highly advanced technology that uses sound waves to emulsify body fat thereby allowing an efficient removal compared with the mechanical disruption of fat used in traditional liposuction. Safe application requires an exceptionally sophisticated plastic surgical, anesthetic, and operating room team.*

The media bombards patients with "magic wand" medical technology but seems less inclined to portray limitations, complications, and deaths. As with any emerging technology, ultrasonic assisted liposuction is producing its share of problems. This article provides an overview of this procedure and guidelines for patient selection. A conservative approach is emphasized for safety.

Since our previous report on liposuction in this journal,[1] technologies have emerged that allow more efficient removal of fat with less blood loss. Among these advances are the tumescent technique, in which large volumes of physiologic solutions are infused into the fatty layer, and ultrasonic assisted liposuction (UAL), in which ultrasonic energy lyses fat cells allowing efficient removal of body fat.

These are powerful techniques that can appear deceptively simple. There is a perception in the media and among laypeople, as well as among some physicians, that liposuction can be performed by anyone in any setting.

Patients often ask their primary care physicians about liposuction and whether or not they are good candidates. This article is designed to help physicians answer questions in their own practices.

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Ultrasound technology

Ultrasound is energy in the form of sound waves generated at a frequency just above the limits of human hearing. Wave motion propagates energy continuously in one direction without the transference of particulate matter. Particles vibrate back and forth, but only the energy waves move forward. The safe use of ultrasonic energy in medical applications is well established (**Table 1**).

In UAL, the equipment in the operating room consists of three parts: a generator, a hand-held transducer, and an ultrasonic cannula. The generator converts electricity from a regular electrical wall outlet to a stronger and higher frequency electrical impulse. This enhanced electrical signal is sent to the hand-held transducer where it acts on a piezoelectric crystal, in which ions are displaced in such a way that they resonate at a defined frequency. Thus, electrical energy is converted into mechanical sound wave energy. The cannula, which the surgeon introduces through a small (1 cm) incision into the fatty tissue, conveys the sound wave energy to the tip, which vibrates back and forth rapidly over a very small distance (100 microns). It is the tip of the cannula that delivers the ultrasonic energy to the fatty tissue for a distance of several millimeters. The frequency of vibration is tuned to target the low density adipocytes. The cell membrane ruptures and the contents are then easily evacuated with suction.

These features have several practical implications for the surgeon performing the procedure. In early models, the shaft of the cannula became hot and could burn the skin. Newer generation instruments have an internal cooling system to keep the shaft cool. Nevertheless, the tip of the cannula, which is the active component, can still become hot due to friction from rapid vibration. The surgeon must keep the cannula in motion in the fatty tissue at all times while the ultrasonic generator is turned on. The tip should be kept well below the dermis (at least 5 mm) because skin bums have been produced by the hot tip from the undersurface. The surgeon has to be careful to avoid "end hits" into the dermis, which occur when negotiating a curved surface. In contrast to a standard non-ultrasonic liposuction cannula, the ultrasonic cannula cannot be bent.

Tumescent technique

Tumescence refers to the infusion of large volumes of physiologic solutions into the fatty layer. A number of investigators have demonstrated the safety and effectiveness of infusing large volumes of lactated Ringers solution mixed with 1 ampule (1 cc) of 1:1,000 epinephrine per liter and 25 cc of 1% xylocaine per liter.[2] The total dose of lidocaine mixed with epinephrine should not exceed 35 mg/kg (this exceeds older recommendations) and the lidocaine can be omitted from the infusate as this limit is approached.[3]

TABLE 1. Applications of ultrasound in medicine.

- GENERALSURGERY
  Liver and kidney resections.
- NEUROSURGERY
  Surgery on the spinal cord, vestibular system, pituitary gland, and in the treatment of Parkinsons disease.
- OPHTHALMOLOGY
  Cataract extraction by ultrasonic phacoemulsification.
- PLASTIC SURGERY
  Ultrasonic assisted liposuction (UAL).
- RADIOLOGY
  Diagnostic imaging, including prenatal evaluation without X-rays.
- UROLOGY
  Lithotripsy to disintegrate kidney stones percutaneously.

Tumescence has several beneficial effects. It facilitates body sculpting by temporarily magnifying the fatty layer, and it allows for a significant reduction in blood loss and anesthetic requirements. In addition, ultrasonic energy travels much more efficiently in a wet environment, and therefore the tumescent technique is virtually always used with UAL. Finally, the tumescent fluid may help prevent thermal injury from the cannula tip.

Indications for UAL

Liposuction is indicated for the treatment of isolated deposits of fat that are resistant to diet and exercise. Recently, medical research has shown what patients have been telling us for years: resistant fat does exist, especially as we age and fat is redistributed over our bodies.[4] UAL removes fat very efficiently because ultrasound energy emulsifies the fat, compared to the mechanical disruption of fat used in traditional liposuction. The surgeon exerts less physical effort with UAL and the motion of the cannula is slow and controlled. This allows the surgeon to concentrate more on the subtleties and finesse of body contouring.

UAL does not replace standard liposuction, which is performed immediately after the ultrasonic portion is completed, and is called the "clean-up" phase. Therefore, UAL requires more total operating time compared to standard liposuction alone.

UAL was first reported in 1988 by Zocchi of Italy[5] and has been used in Europe since that time. It has been used in the United States for the past three years. Its efficacy is well documented.[2,6-12]

As experience is gained, the results of UAL surpass those of standard liposuction in certain body areas, especially where fat is fibrous and difficult to remove (**Table 2**). Conversely, the char-

acteristics of the ultrasonic device render it relatively contraindicated at the present time in areas of the body characterized by a paucity of subcutaneous fat because of the risk of skin burns or in areas close to nerves (e.g., eyelids, neck).

Experience and complications

Early experience with UAL revealed complications such as skin blistering,[11] skin loss,[2,13] and seromas, with seroma formation representing by far the most frequent complication, ranging from 10% to 50%.[2,14] The incidence of infection and hematoma are less than 1%.

These complications are being minimized as experienced practitioners pay more attention to patient selection, keep the thermal generating cannula tip at least 1 cm from the underside of the skin surface, minimize the amount of ultrasound time by respecting endpoints (loss of resistance), use standard liposuction to remove residual emulsified fat, and use caution during multiple procedures to avoid interference with skin circulation.

From our practice, we have reviewed 33 consecutive patients ranging in age from 29 to 58 years old. All procedures were performed under general anesthesia or intravenous sedation. Lidocaine was removed from the infusate solution after a total of up to 1,200 mg were administered. There were no operative complications. In part, we attribute this to a modification in technique: we no longer close the liposuction incisions. This allows serous or serosanguinous fluid to egress freely, which is absorbed by ABD pads that the patient changes under the elastic garment as needed, and which ceases in 24 to 48 hours. This may diminish seroma formation. The incisions are small (1.0 - 1.5 cm) and they heal as well and as inconspicuously as incisions that are sutured.

While there were no operative complications, two patients in this series were dissatisfied with contouring in the upper back fat rolls. All other areas yielded a high degree of satisfaction. Perhaps the dissatisfied patients were poor candidates for UAL because there may have been too much skin laxity. Contour irregularities (either residual fat or skin laxity) occur in 2% to 4% in recent UAL series.[2,15]

TABLE 2. Areas of the body where ultrasonic assisted liposuction (UAL) works especially well

- abdomen
- waist
- outer thighs
- male gynecomastia
- secondary ("re-do") liposuction

TABLE3. Guidelines for safe ultrasonic assisted liposuction (UAL).

1. Remove less than seven liters of fat in one operation.
2. Use the lowest intensity of ultrasonic energy required to emulsify the fat (usually 75% of full power).
3. Limit ultrasonic energy time to about 10 minutes in large body areas and 5 minutes in smaller body areas.
4. The ultrasonic tip should remain at least 5 mm below the dermis.
5. Avoid "end hits" around curve areas. Ultrasonic cannulas cannot bend.
6. Use newer generation instruments equipped with internal cooling systems.
7. Because of the complexities involved, it is our preference that this procedure be performed in a hospital-based ambulatory facility with well qualified plastic surgical, anesthesia, and operating room personnel who are familiar with the equipment, who are dedicated to the conduct of this type of surgery, and who understand the fluid shifts that will occur with high volume infiltration.

Safety issues

As larger volumes of fat are removed and larger volumes of solutions are used to tumesce the tissues, fluid management becomes a complex issue. Not unexpectedly, serious complications and deaths related to fluid management and lidocaine toxicity are encountered. One editor reports 67 lipoplasty fatalities in the United States over an 18-month period, which exceeds the total number of deaths in all the years before the widespread use of large volume tissue infiltration.[12] This number may be an underestimate, and it does not reflect unplanned hospital and ICU admissions that have occurred in Maryland.

In years past, when smaller volumes (perhaps 1-2 liters) of infiltrate were injected into the subcutaneous fat, the amount of fluid absorbed into the intravascular space, which is estimated to be about one-third of the crystalloid infiltrate over many hours, represented a relatively small fluid load which any healthy adult could accommodate. Now, when infiltrates in the 6 to 15 liter range are not uncommon, the fluid load becomes very significant. Close monitoring and appropriate adjustments of intravenous fluids are required to avoid pulmonary edema.

The proper management of intravenous fluids and infiltrating (interstitial) fluid is currently the topic of lively discussion in the plastic surgery literature.[16-18] While there is no formula that will work for every patient, the following recommendations for safety in UAL are based on our experience and knowledge of expected fluid shifts:

1. Infiltrate approximately a 1:1 ratio of the wetting solution to the expected amount of fat to be removed. Our previous re-

port on liposuction[1] offered guidelines for estimating the amount of fat to be removed. This will usually be enough to distend the tissues to firmness without causing marked tissue or skin distortion.[15]

2. Attention to detail in the principles of safe UAL (**Table 3**).
3. Patient selection. Liposuction is not, and was never designed to be, a treatment for obesity. It should be thought of, and presented to the public as, a recontouring procedure, not a weight-reducing procedure.
4. Close monitoring of clinical parameters, including urine output, during the perioperative period by personnel dedicated to this type of surgery.

Insurance

Liposuction is not covered by insurance.

Conclusions

The ABC television program *20/20* has referred to UAL as "the magic wand of medicine," and patients will come into the practitioner's office with this perception. However, this is not the whole story and patient education is essential. UAL is a powerful tool and with it are complex issues of patient selection, safety, and fluid balance.

UAL is very successful for body recontouring in suitable candidates. It is not a substitute for diet and exercise, and it is not a treatment for obesity. Unfortunately, UAL can appear deceptively simple, and among some people there is a perception that it can be performed by anyone in any setting. This article is intended to give the practitioner an overview of the complexities and issues in UAL. Emphasis is placed on patient selection, a conservative approach in the amount of surgery performed, and performance of the procedure in a facility with full resources and sophisticated personnel who are familiar with the conduct of this type of surgery and the equipment.

UAL is a technically demanding procedure. It should be performed only by practitioners qualified to perform it who understand the intricacies of both the procedure and the postoperative care.

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Skin cancer detection and prevention: a community program promoting sun safe behaviors

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ABSTRACT: *New cases of skin cancer will be diagnosed over one million times in the United States in 1999. Basal and squamous cell types can cause significant cosmetic morbidity. Malignant melanoma can cause serious morbidity and mortality. Thus, early detection and prevention efforts are crucial for all skin cancers. Studies have identified genetic, hereditary, and environmental factors associated with increased risk of developing skin cancer. In this article, the incidence and risk factors are reviewed. The Howard County Skin Cancer Awareness Project, established in 1996, is presented as a community based program that aims to increase public awareness about the prevention and early detection of skin cancer. Future directions are also addressed.*

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Over one million new cases of skin cancer are diagnosed in the United States each year and the incidence rates are escalating. In 1999, over 44,000 new cases of malignant melanoma are expected to be diagnosed. Most of these cases (58.4%) will be found in males. In 1998, over 40,000 cases were diagnosed with approximately 700 cases being detected in Maryland. Although early diagnosis and treatment greatly reduces the risk of death, some 7,300 persons were expected to die from melanoma in 1998. These melanoma rates reflect a doubling of the incidence between 1973 and 1991 and a 12% increase between 1995 and 1997.[1,2]

Basal and squamous cell carcinoma account for approximately 80% or 800,000 of the newly diagnosed cases of skin cancer each year. If detected early, these types of skin cancer have better than a 95% cure rate. Regardless of this ex-

tremely high cure rate, 1,200 people were expected to die of basal or squamous cell carcinoma in 1998.[3]

Given these escalating rates of skin cancer, studies have sought to identify risk factors for developing such forms of cancer. Genetic or hereditary factors such as family or personal history of skin cancer, large numbers of dysplastic nevi, and skin type have been associated with increased risk. In addition, environmental variables have been noted as predictors of skin cancer later in life. The main factors associated with skin cancer are sun exposure without protection and history of even a single sunburn during childhood. Further, sun exposure promotes the development of nevi and, hence, increases the risk of skin cancer.[4,5,6]

Early detection of skin cancer is crucial for treatment. If detected in its early stages, the cure rate for melanoma is 95%. This drops dramatically to lower than 5% for metastatic lesions.[7] Skin self-examination has been encouraged to aid in early diagnosis. Further, avoiding excessive exposure to the sun has been promoted as a healthy preventive measure. The proper use of sunscreen with a sun protection factor (SPF) of at least 15 will reduce exposure by 94%. Wearing a hat will eliminate 70% of the sun's harmful rays. And, participating in outdoor activities before 10 a.m. or after 4 p.m. will allow an individual to avoid 60% of the sun's UVB rays.[8]

Unfortunately, numerous factors preclude people from engaging in these sun safe practices. For many people, having a suntan is associated with increased beauty and health. A review of popular fashion magazines between 1983 and 1993 revealed the societal value placed on having a tan with the "healthy moderate tan" being quite prevalent in these publications.[9] For young adolescents, knowledge regarding the dangers associated with sun exposure has not been found to correlate with healthy practices. Rather, parental and peer influences and the value of having a suntan had a deleterious impact on the use of sunscreen and avoidance of the sun during peak hours.[10]

The Center for Disease Control and Prevention, in collaboration with the American Academy of Dermatology, has targeted skin cancer as a public health concern in recent years. They have sought to promote skin cancer prevention and early detection, to increase knowledge regarding this health concern, and to evaluate the effect of sun protection counseling.[11] Individuals are frequently overexposed to the sun at beaches and swimming pools. Studies have begun to address the impact of interventions at these locations. For instance, an increase in protective behaviors was noted at a community pool where lifeguards modeled similar behaviors, free sunscreen was available, and relevant information was disseminated.[12]

A community outreach project

In 1996, Howard County General Hospital and the Columbia Association formed the Howard County Skin Cancer Awareness Project. With a population of approximately 225,000, Howard County is predominantly Caucasian (83.2%) and well-educated. Almost half (46.9%) of the adults have a bachelor's degree and 19.2% hold a more advanced educational degree. The median family income is $61,088. Howard County General Hospital, a member of the Johns Hopkins Medicine, is a 233-bed private, not-for-profit health care provider for the community. Thirty-four specialties offer emergency, inpatient, or outpatient care. In addition, there is a commitment to preventive health care, which is coordinated through two Howard County General Hospital Wellness Centers. These centers provide health education programs and screening services for the general public. The Columbia Association is a service organization designed to meet the needs of approximately 60,000 persons who work or reside in Columbia, Maryland. As part of its responsibilities, the Columbia Association oversees the operation of 23 community swimming pools. Collectively, more than 500,000 visits are recorded at these pools between Memorial Day and Labor Day each year.

Beginning in 1996, the Howard County Skin Cancer Awareness Project developed an educational program to increase healthy and preventive skin care practices. The program has run for three consecutive summers. Implemented at all 23 community pools, the project initially had two components: lifeguard training and public education.

Lifeguard training

The first segment was to educate over 200 lifeguards employed by the Columbia Association pools about skin cancer. All lifeguards participated in five hours of training provided by

TABLE 1. Telephone survey assessing impact of information disseminated at pools

SURVEY ITEM	PERCENT
Used additional protective measures as a result of skin cancer awareness project	43.1
Sought additional advice for sun-related condition	18.4
Information provided enhanced knowledge regarding hazardous sun exposure and sun-induced skin problems	51.5



FIGURE 1. Logo for the Howard County Skin Cancer Awareness Program.

physicians, members of the Columbia Association, and the director of community health education from the hospital. Training focused on increasing knowledge about skin cancer by teaching lifeguards how to identify suspicious looking lesions and "funny looking moles (FLMs)." The search for FLMs became the program's logo. Various materials (e.g., hats, T-shirts, static cling stickers) were dispersed depicting a cartoon of a mole (the animal) holding a magnifying glass and looking for FLMs (**Figure 1**).

In addition to increasing knowledge about suspicious moles, role-play situations helped lifeguards learn how to discuss the identification of such lesions with pool patrons. Healthy skin care practices were also addressed. These guidelines included the proper use of sunscreen, how to avoid being in the direct sun, and the use of protective clothing and sunglasses. As a part of this training, lifeguards were encouraged to become more positive role models and were required by the Columbia Association (their employer) to sit under umbrellas when on the lifeguard stand and to wear hats and shirts while on duty.

Targeting public awareness

The second component of this project was aimed at increasing the knowledge and skin care awareness of the pool patrons. All pools dedicated one of their bulletin boards to disseminating information about the risks associated with overexposure to the sun and healthy skin care practices. Swimmers were informed that ultraviolet rays contribute to increased risk of skin cancer. They were encouraged to avoid the sun between 10 a.m. and 3 p.m., apply sunscreen with a SPF of at least 15 every 90 minutes, and wear protective clothing such as hats, shirts, and sunglasses. To encourage the use of sunscreen, free samples were obtained from a pharmaceutical company and were available for patron usage. Parents were warned about the increased risk of skin cancer associated with one blistering sunburn during childhood. In addition, patrons were asked to complete an assessment form that addressed sun safe behaviors and skin cancer concerns, and encouraged follow-up with a physician.

Pool resource centers provided a number of handouts obtained from the American Academy of Dermatology and American Cancer Society. These materials aimed to increase awareness about the risks of sun exposure and to educate individuals about how to identify suspicious lesions or FLMs. Pool patrons were encouraged to perform monthly skin self-examinations and to assess moles for asymmetrical shapes, irregular borders, color variation, and diameters larger than 6mm. Reinforcement of these health practices was provided through the Columbia Association and Howard County General Hospital newsletters.

At the end of the first summer during which this program was implemented (1996), a brief telephone survey was conducted (**Table 1**). A total of 408 persons who had visited one of the Columbia Association pools were contacted and asked to provide feedback regarding impact of the program. Over half of the respondents noted that the information increased their knowledge about skin problems related to sun exposure and 18% sought additional advice for a sun-related skin condition. Approximately 43% reported using protective wear such as hats, shirts, or sunglasses as a result of the disseminated information. Further, almost one-third of the sample polled indicated that having samples of sunscreen available at the pool had a positive impact on their use of the lotion.

Additional directions

Children are involved in numerous outdoor activities throughout the year. Promoting sun safety in these situations needs to be addressed. Beginning in 1997, the Howard County Skin Cancer Awareness Program formed a partnership with health teachers, nurses, and coaches in the Howard County public school system. An annual dialogue has begun regarding the risks associated with sun exposure and the preventive measures that can be taken by children when they are engaging in school-related outdoor activities. Two Howard County teachers who were recently diagnosed with melanoma have been instrumental in educating other educators about how to promote sun safe habits in their students. Teachers and coaches were encouraged to be positive role models and to urge students to use sunscreen during field trips and outdoor activities, to wear hats, and to discourage "skins vs. shirts" during sport practices. The possibility of incorporating an educational component into the county's health curriculum has also received consideration.

Conclusion

The Howard County Skin Cancer Awareness Project has

aimed to teach residents within their community about the risk factors associated with overexposure to the sun and measures that can easily be taken to minimize such risk. The county-wide effort at the swimming pools over the past three summers indicates that patrons are receptive to the dissemination of information about how to identify FLMs and how to reduce their exposure to the sun. The increased attention to this subject matter at the swimming pools, the use of lifeguards as positive role models, and the availability of free sunscreen made a positive impact on sun safe behaviors.

This type of program can be implemented with only minimal costs but can reap potentially far reaching positive effects. Other communities can help to encourage safe sun practices at their pools through similar programs. In addition, considerable effort could be directed toward encouraging school teachers and coaches to promote healthier skin practices. Future directives could include availability of sunscreens at school, especially for use during recess, outdoor field trips, and after-school outdoor sports. Community outdoor sports should also be encouraged to teach their participants about the importance of healthy sun practices. Finally, the inclusion of the risks associated with sun exposure should be a mandatory component of the health education curriculum.

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ABSTRACT

The use of pentoxifylline increased the hematocrit and eliminated the transfusion requirement for a patient who had microangiopathic hemolytic anemia due to three prosthetic heart valves.

Pentoxifylline treatment for microangiopathic hemolytic anemia caused by mechanical heart valves

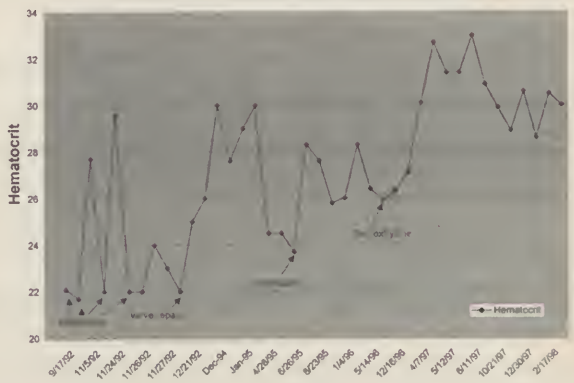
Steven Geller, M.D., FACP, and René Gelber, M.D., FACS

Microangiopathic hemolytic anemia can be caused by red cell trauma, fragmentation and destruction by artificial heart valves.[1,2] We present a new therapy utilizing pentoxifylline that reduced the severity of anemia and eliminated the need for transfusion support in a patient with microangiopathic hemolytic anemia due to prosthetic valves in the mitral, aortic, and tricuspid positions.

Case description

Patient is a 75-year-old woman who had Bjork-Shiley-Convexo-Concave valves placed in the mitral, aortic, and tricuspid positions for rheumatic heart disease in October 1990. Her hematocrit dropped post-operatively to 24% and peripheral blood smears showed a microangiopathic hemolytic pattern. A packed red blood cell transfusion was required every two to three weeks to maintain a hematocrit of 25%. No other cause of her anemia was found despite a rigorous diagnostic evaluation, including upper and lower endoscopy, bone marrow aspiration, and direct and indirect Coombs testing. A leak at the mitral valve annulus was subsequently diagnosed and repaired and the patient's need for transfusion was reduced, but not eliminated. The baseline hematocrit rose to 27%. In August 1996, the patient developed cutaneous ulcerations at the left ankle as a consequence of arterial and venous insufficiency. Pentoxifylline was started as adjunctive care to enhance cutaneous circulation. Coincidentally, her baseline hematocrit rose to 31% and the need for blood transfusions were eliminated.

Figure 1: Effect of Pentoxifylline on Hematocrit



We propose, as has been reported once before,[3] that pentoxifylline, by increasing red blood cells flexibility, reduces the mechanical trauma to the red cell by artificial heart valves, and appears to increase the hematocrit and reduce transfusion requirements in patients with valve-induced microangiopathic hemolytic anemia.

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ABSTRACT

The clinical course of a case of bird fanciers' lung is described along with the considerations that are important in the management of this form of hypersensitivity pneumonitis. Diagnostic parameters, therapeutic considerations, and environmental issues are discussed in the context of the current literature.

Bird fanciers' lung: a case report

Bernard Farrell, M.D., Katherine Farrell, M.D., M.P.H., and Harry A. Oken, M.D.

Case description

A 52-year-old, non-smoking woman who worked as a legal secretary presented in April 1998 with dyspnea on exertion and a cough that had been progressive for six years. While generally comfortable at rest, she had to stop and rest on walking one-half mile. There was no orthopnea or nocturnal dyspnea. The cough was non-productive and occurred along with the shortness of breath. She also had symptoms of seasonal atopy. Previous treatment for suspected asthma had been of limited benefit except for symptomatic relief after systemic corticosteroid administration. Routine allergy testing had been negative. Her medical history was otherwise remarkable only for recurrent bronchitis and pneumonia during childhood. She had a pet dove for 8 to 9 years, but reported that she always had pet birds.

Physical examination revealed fine lower lobe inspiratory rales. Pulmonary function testing revealed a restrictive defect and diffusion impairment. High resolution CAT scan (HRCT) demonstrated ground glass appearance of the lung parenchyma. Exercise testing revealed O_2 desaturation. Antibodies to pigeon serum, aspergillus, and the thermophilic actinomyces, including Micropolyspora faeni (also known as T. polyspora) were negative. These are all potential sources of antigen which have been implicated in hypersensitivity pneumonitis associated with various environmental exposures. Thoracoscopic lung biopsy showed airway granulomas and alveolitis consistent with hypersensitivity pneumonitis. Only minimal fibrosis was observed.

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Discussion

Bird fanciers' lung is one of the classic forms of hypersensitivity pneumonitis or extrinsic allergic alveolitis. It is thought to be caused by sensitivity to avian protein, although feather mites have been implicated. Other examples of allergic alveolitis include farmers' lung and humidifier lung, both thought to be associated with exposure to thermophilic actinomyces.

Symptoms may be acute, subacute, or chronic. The acute form presents with flu-like illness (i.e., fever, chills, myalgias) and is usually accompanied by cough and dyspnea. The symptoms may last hours to days. The subacute form is manifested by cough and dyspnea with gradual onset over days to weeks. The chronic form occurs over months or years with gradually progressive dyspnea and cough.

The case presented here is an example of the chronic form of the disease. The classic symptoms of gradually progressive cough and dyspnea were reported. Symptoms were present over a period of approximately six years, first noticeable two to three years after procurement of the dove, although interestingly the patient reported always having birds.

Management of this disorder involves avoidance of the antigen by separating the patient from the source of antigen, in this case the bird, followed by environmental cleanup. Many patients are reluctant to part with pets. This patient fell into that category. After counseling about the diagnosis, she explained that it would take some time to find an alternative accommodation for her dove. Therefore, she was started on oral prednisone. This resulted in a

TABLE 1. Pulmonary function test results

	Pre-treatment	Post-treatment
FVC liters	1.62	2.19
FEVI liters	1.35	1.80
DLCO ml/min/mmHg	9.50	14.51

significant improvement in pulmonary function and symptoms despite continued exposure (**Table 1**). The use of steroids to control symptoms without removing the bird from the home is less than ideal because of potentially serious side effects and risk of disease progression associated with ongoing exposure.

All elements of this case pointed to the diagnosis of bird fanciers' lung except the negative antibody testing. Such testing may not always be positive, however, because of lack of specificity of the antigens used.

This patient's history of recurrent pneumonia and bronchitis in childhood may have been associated with avian exposure at that time. Although uncommon, this disease has been reported in childhood. Bronchial involvement is also recognized.

Both the response to treatment and the prognosis seem to be less favorable in bird fanciers' lung than in farmers' lung. The latter usually responds to appropriate environmental management whereas the former may be progressive even in patients who agree to separation from the source of antigenic material.

Recurrence of symptoms after initial compromise solutions may require more drastic environmental measures such as a job change for those with occupational exposure. High levels of bird antigen can be detected in living spaces long after environmental cleanup. Home environments should be carefully cleaned to remove as much antigenic material as possible. The birdcage and any items used extensively by the bird should be removed or placed in sealed plastic bags. Surfaces should be damp mopped. Dry sweeping should be avoided since it increases airborne dust. Dust management should include the removal or thorough cleaning of dust sinks such as carpets, stuffed furniture and drapes, and the use of high efficiency particulate (HEPA) filter vacuum cleaners or central vacuum systems with outdoor exhaust. Careful ongoing dust management may be necessary to reduce inhalation of airborne particles to which avian proteins may become affixed. Filters on air conditioning or heating systems should be changed regularly. Air duct cleaning may be beneficial especially in older homes. The patient should avoid contact with birds in indoor environments and should not visit areas where large numbers of birds congregate such as poultry farms or bird-breeding establishments.

The diagnosis of bird fanciers' lung is suspected on the basis of the clinical presentation combined with a history of exposure. Careful history taking is of great importance. Occupation is often included in routine history and physical examination, but the presence of birds or other animals in the home environment is included less often. Merely inquiring about pets may not be enough. The authors recall a case of bird fanciers' lung associated with commercial bird breeding by another member of the household. No clue as to the presence of birds had been provided by routine inquiries about pets or the patient's occupation.

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ABSTRACT

Cat scratch disease is usually a self-limited illness associated with tender lymph nodes, fever, malaise, and fatigue. Lymphadenopathy usually resolves spontaneously within three to four months. Cat scratch disease can be atypical as indicated by the presentation of our patient.

Cat scratch encephalopathy

Jerry E. Seals, M.D., and Harry A. Oken, M.D.

Cat scratch disease (CSD) was first described in 1931 by Debre et al.[1] They reported the first case in 1950.[2] The first case in the United States was reported in 1951 by Greer et al.[3]

CSD is a zoonotic bacterial infection, which is almost always associated with close contact or a scratch from a cat. CSD usually begins as a skin papule, or pustule, at the site of the cat scratch or bite. A lesion develops in three to five days after exposure and heals without a scar within two to three weeks. Regional lymphadenopathy follows in about one to two weeks, associated with various systemic symptoms that last from a few weeks to a few months. The duration of symptoms for CSD averages two to three months. In 10% of the cases, regional lymph nodes may become fluctuant and suppurative and require local drainage. Most patients remain afebrile and experience few systemic symptoms.

However, approximately 10% of patients with CSD develop atypical signs and symptoms. These may include Parinaud's oculoglandular syndrome, central nervous system involvement, Bell's palsy or bony involvement, and sepsis syndrome.[4]

Case report

In the spring of 1989, an 18-year-old male who lived on a horse farm presented to Howard County General Hospital's emergency department in a coma. Approximately one hour earlier he was found by his father in the barn and he was unresponsive. If touched or disturbed, he responded with jerky, shivering motions and repetitive flexion at the waist. The patient had been seen over the past month at a local walk-in clinic for apparent dysuria and evaluation of a mass on the arm above the antecubital fossa.

On presentation the patient's rectal temperature was 104°, blood pressure was 100/60 mm Hg, heart rate was 120, and respirations were 20 times per minute. The patient was unresponsive to pain, yet had repetitive thrusting and flexion motions of his upper and lower trunk. This movement was clearly not seizure activity and seemed to accelerate with continued examination. He was given chloramphenicol and ampicillin empirically for meningoencephalitis in the emergency department. A computed tomography scan of the head showed only some loss of sulci. The patient was sedated and intubated for airway protection. Repeated multiple physical examination was significant for involuntary, intermittent, and lateral rotation motion of the neck, and continued flexion motions of the trunk without opisthotonos. Within two hours of presentation, a very faint macular morbilliform rash was noted on the anterior chest. The rest of the pertinent examination showed a grape-shaped, nonfluctuant, firm node in the right axilla with an indurated area in the right antecubital fossa. Laboratory studies showed a white blood cell count of 20,000 and a hematocrit of 40. Arterial blood gas of 35% FIO_2 showed a pH of 7.38, PCO_2 of 35, and PO_2 of 135. A chest x-ray was within normal limits. Lumbar puncture showed an initial pressure of 150, three red blood cells, two white blood cells, and 100% lymphocytes; acid fast stain and gram stain were negative. The patient was placed on IV phenytoin and contin-

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ued these atypical muscular movements. The possibility of tetanus was contemplated and he was empirically given 250 units of IM human tetanus antitoxin.

The patient had a mildly abnormal EEG with minimal diffuse slowing. No eliptoform activity was noted. The patient was continued on chloramphenicol, ampicillin, phenytoin, and lorazepam. Acyclovir was added for herpes virus and metronioazole for clostridium tetani, although these were thought to be unlikely. Toxicology screens of blood, urine, and gastric fluid were all negative.

Fever and muscular movements caused mild-to-moderate rhabdomyolysis. Over the next four hours, the patient showed neurologic improvement and remained afebrile. Within six days, the patient was alert, oriented, and back to his usual state of health. The patient denied taking any drugs or having any toxic exposure. A magnetic resonance image was normal, and a right axillary lymph node was removed and found to have a necrotic center with fibrous tissue and abscess formation. Consideration for cat scratch was given postdischarge; a paraffin block was sent for a Warthin-Starry stain, and was initially read as negative. It was then sent for a second opinion at the Armed Forces Institute of Pathology (AFIP). Skin test material for CSD was obtained from the Uniform Health Services Hospital in Bethesda. The patient had a positive skin test showing 21 mm of erythema with induration. Subsequently, the Warthin-Starry stain sections revealed silvered, single filamentous and branch bacilli of CSD in the vessel walls. The patient continued on an uneventful recovery and went on to win the local and district high school wrestling titles. Although the patient could not recall a recent cat scratch, approximately 10 cats lived on his farm.

Discussion

CSD encephalopathy (CSDE) was first reported in 1952 by Stevens.[5] In 1986, Lewis[6] reviewed 38 patients with CSD neurologic-related complications; 34 had encephalopathy and 4 had myelopathic involvements without encephalopathy. In 1991, Carithers and Margileth[7] reported on 76 patients with CSD neurologic complications. Sixty-six of these patients had CSDE and 15 had either cranial nerve or peripheral nerve involvement. The incidence of these neurologic complications varied from 0.17% to 2% of patients with CSD.[7] The complications were found more frequently in older school-age children, adolescents and adults, more often than noted in the general age distribution of uncomplicated CSD. Aside from neurologic symptoms, fever and other symptoms were similar to those patients with typical CSD. The onset of neurologic complications vary from a few days to two months, after onset of lymphadenopathy, and all of the patients in the series had a history of contact with a cat. All but one had a positive CSD skin test. Seizures occurred in 28 of 61, or 46% with CSDE. Transient combative behavior occurred in 24 of 61, 39%, primarily during the recovery phase of seizures and coma.[7]

Other symptoms of CSDE patients include headache, malaise, and lethargy lasting from one to several weeks.

Laboratory studies in the patients with CSDE found a normal CEC in 45 of 60 (75%) patients. Mild to moderate leukocytosis occurred in 13 patients. Cerebral spinal fluid findings were normal in 35 of 51 (69%), CSF protein concentrations were normal in 65% of patients, and glucose concentrations were normal in all but one patient.[7] CT scans of 33 patients and MRI imaging of 5 patients were normal and not diagnostic. Electroencephalographic studies showed background slowing in 36 of 46 (80%), and all were normal on follow up. All 76 patients in the series reported complete recovery in one year; 78% reported recovery within one to three months.

The cause of CSD was not elucidated until 1983 when Wear et al.,[8] using Warthin-Starry and Brown Hopp's stains, reported finding bacteria in lymph nodes of CSD patients. In 1992, Regnery et al.[9,10] reported that the organism responsible for CSD was *Bartonella henselae.*

Bartonella species were first recognized in 1909 by Baxton.[11] Bartonella species are now considered an emerging pathogen. There are 11 recognized species of Bartonella and 4 are known to be associated with human disease. One of the species of Bartonella, *B. henselae*, has been identified as the cause of CSD in humans and three other species of Bartonella have been associated with other human diseases. The cat is the natural host for *B. henselae* and this organism has been isolated from cats who have been associated with human cases of CSD.[9,10] Diagnosis of CSD in the past required a positive skin test. However, this test is less sensitive, less specific, not readily available, and considered by many to be unsafe compared to newer techniques.[12,13]

Serologic testing for the presence of antibodies to *B. henselae* is the most widely used test for laboratory confirmation of diagnosis of CSD and other manifestations of this organism. When strict criteria were required for clinical diagnosis of CSD, all of 38 patients had positive IFA serology for CSD agent.[13] Therefore, serologic IFA antibody test for *B. henselae* is felt to be a highly sensitive and specific test used to diagnose CSD.

B. henselae organisms can also be cultured from blood, lymph nodes, and other tissues of a person infected with the organism. The organism is a fastidious, slow growing organism.[14] A presumptive tissue diagnosis of infectious CSD can be made by the Warthin-Starry and Brown Hopp's tissue stain.

The most sensitive test to detect the presence of *B. henselae*-specific DNA sequence is the PCR test.[12] The PCR test can also discriminate between the different species of Bartonella.

Treatment with antibiotics such as erythromycin, clarithromycin, azithromycin, rifampin, doxycycline and gentamicin have been found to be effective.

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ABSTRACT

Persons with Parkinson's disease are at great risk of suffering traumatic injuries from falls. Intervention with physical therapy and the use of assistive devices are helpful in preventing falls. Unfortunately, many patients are not referred for these interventions until they have already suffered traumatic injury. A simple measure of balance, which can easily be performed in an office setting, is the functional reach. This measure has been shown to be predictive of falls in the elderly. In this study, the functional reach was measured in patients with idiopathic Parkinson's disease during each visit over at least one year. Patients deemed at risk of falling were referred for physical therapy and possibly assistive devices. Those patients subsequently suffering falls were noncompliant with the recommendations.

Postural instability in Parkinson's disease

Steven Grill, M.D., Ph.D.

Case report

An 81-year-old right-handed male had a 10-year history of symptoms of Parkinson's disease and had been on Sinemet since diagnosis at a dose of 25/100 tid. He was still able to do most of his activities of daily living. His speech was moderately affected and his handwriting was poor. He was falling occasionally. Examination revealed him to be well nourished and strong appearing. He had minimal hypomimia. Resting tremor was slight and infrequently present; there was only slight cogwheeling rigidity. Fine finger movements were very mildly impaired. He had a stooped posture and appeared to need assistance in his ambulation but refused it. His functional reach measurement was 25 cm. He was advised to obtain a walker and to have physical therapy. Since he appeared mildly undermedicated in terms of bradykinesia, his Sinemet was increased. Two months later he returned for follow up. He had obtained the walker but was not using it on a regular basis. He denied falling. Again he was referred for physical therapy. Three months later, he was still not using the walker and was falling more often, perhaps 10 times since the previous visit. He was again cautioned to use the walker but stated that he didn't want others to think of him as handicapped. He did not undergo physical therapy. The following day he presented to the emergency room with an intracapsular fracture of the left hip. Two months later he was still recovering, spending much time in a wheelchair.

Parkinson's disease affects about one million people in the United States. The introduction of levodopa in the 1960s[1,2,3] was a major advance in the treatment of the disease. Unfortunately, as the disease progresses, several symptoms develop that are not responsive to levodopa. These include autonomic dysfunction, dementia, and postural instability.[4] Postural disturbances are not due to weakness but instead result from the loss of normal reflex postural adjustments.[5] There appears to be a loss of anticipator postural reflexes in Parkinson's disease.[6] In advanced disease, falls occur mainly when arising from a chair, turning, or when in crowds. The injuries from falls, including head trauma and hip fractures, often result in major added disability. Falls are related to the postural instability, which is not responsive to dopaminergic therapy.[7]

It is therefore of great importance to recognize when patients are at risk of falling so interventions, including physical therapy and providing for the training and use of assistive devices can be instituted.

The Unified Parkinson's Disease Rating Scale (UPDRS) has a component designed to assess balance. A rating of 0 implies normal balance, 1 implies that the patient must make a corrective response when pulled backwards by the examiner, and 2 suggests the patient falls backwards when pulled. Because of

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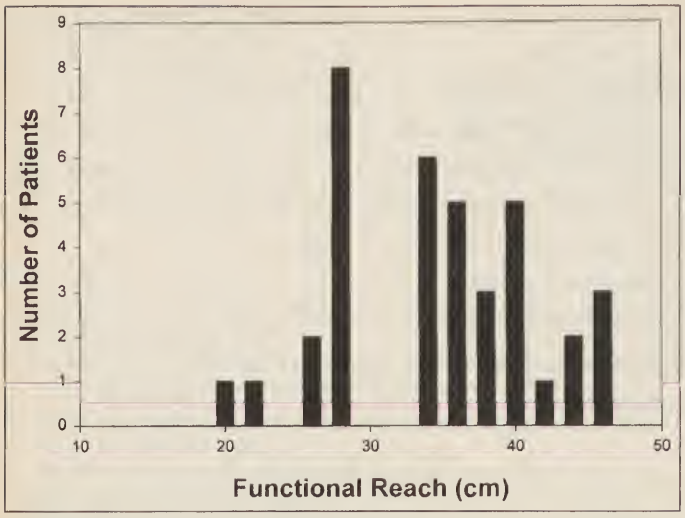


FIGURE 1. Histogram showing the distribution of the functional reach measurements at first visit for the 37 patients evaluated.

the variability in the examiner's force of perturbation, as well as the likelihood that when a patient has reached a score of 2 that they are already falling, this testing is of uncertain reliability in predicting falls.

The functional reach (FR) measure has been demonstrated to represent a reasonable measure of balance[8] and is predictive of falls in elderly males.[9] In the latter study, recurrent fallers had a mean FR of 6.4 +/- 5.3 inches whereas nonfallers had an FR of 10.0 +/- 4.3 inches. The score improves with physical therapy.[10]

In the present study, patients with idiopathic Parkinson's disease were assessed for at least one year. The UPDRS, FR, and other measures of bradykinesia were measured at each visit to evaluate whether FR was helpful in managing patients with Parkinson's disease and whether it changed as the disease progressed.

Methods

Patients were derived from the population of patients with Parkinson's disease seen in a Movement Disorders Practice (part of Neurology Specialists, P.A.). One-hundred seventy-eight patients with Parkinson's disease had been seen over the previous $1^1/_2$ years. Of these, 34 were unable to stand without assistance and were therefore unable to be evaluated using the functional reach. Thirty-seven patients (24 males, 13 females, mean age 67.9 +/- 9.9 years, range 46-84 years) satisfying established criteria for Parkinson's disease were evaluated for at least one year (mean 20.7 +/- 6.6 months) and were included in this analysis. All history and examinations were performed by a single individual (the author).

The FR was measured using a tape measure attached horizontally to the wall. Patients stood in their usual footwear and extended their right arms forward horizontally. They reached as

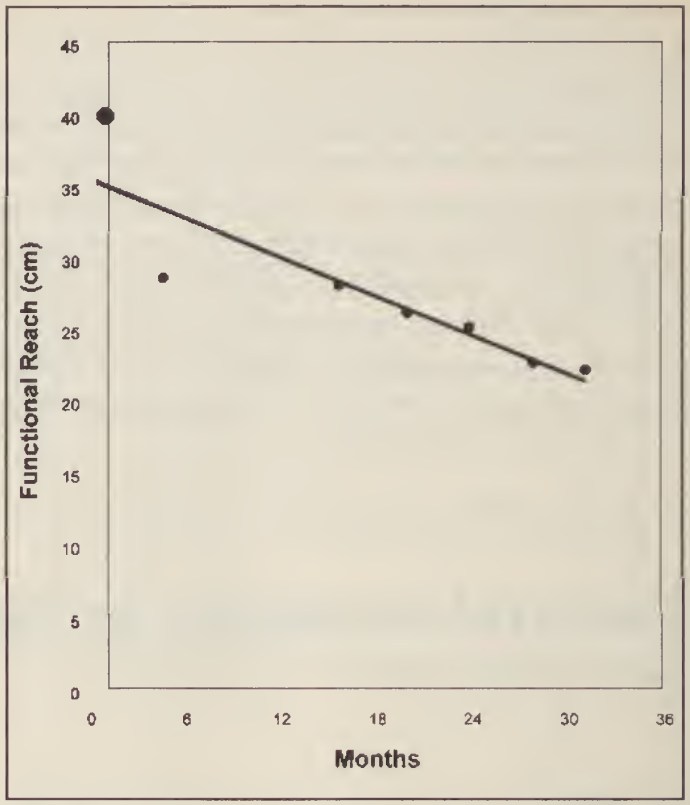


FIGURE 2. The functional reach measurement as a function of time is shown in a 58-year-old male with Parkinson's disease.

far as they could until they either needed to take a step or began to fall at which point the examiner intervened to prevent falls. The distance of excursion of their third metacarpal along the tape measure was recorded. They were not allowed to touch the wall, but no further restrictions on the method of reach were imposed. Two trials were completed at each visit. Patients were routinely referred to physical therapy if their FR measurement was below 30 cm. Physical therapy was done at local therapy centers without specific control of the types of therapy; however, they were specifically referred for gait evaluation and training, and consideration of an assistive device.

Results

At the initial office visit, the mean FR for the 37 patients studied was 34.0 cm +/- 6.9 cm. For the population of patients with Parkinson's disease evaluated in the office but not necessarily followed for a year, the mean FR was 33.5 +/- 8.0 cm (n=144). **Figure 1** shows the distribution of the FR for the 37 patients at their initial visit. Recall that patients with an FR of less than 30 cm were deemed at risk for falls and were generally referred for physical therapy. Of the twelve patients with an initial FR less than 30, four subsequently suffered falls. Of the remaining 25 patients, four also subsequently suffered falls. The falls were usually in the setting of being noncompliant with recommendations for physical therapy and the use of assistive de-

vices. Five patients refused a recommended assistive device. One fell pulling weeds in the garden and another while carrying a toolbox.

It should be noted that the FR may deteriorate as the disease progresses, despite adequate control of other parkinsonian symptoms. **Figure 2** shows the functional reach measurement for a 58-year-old male diagnosed with Parkinson's disease at age 50. Note the rather steady decline in the functional reach measurement with time. This patient underwent physical therapy when it was recognized that his balance was deteriorated and has yet to suffer a fall. The FR scores of 21 of the 37 patients deteriorated during the evaluation period.

Discussion

The loss of postural reflexes is part of Parkinson's disease and also a normal part of aging.[11] The akinetic-rigid gait associated with Parkinson's disease may be seen in many other diseases including drug-induced parkinsonism, multiple system atrophies, hydrocephalus, frontal lobe tumors, neurosyphilis, and the senile gait disorder of the elderly.[12] This latter condition is probably the most common gait disorder of the elderly and is a result of the cumulative effects of several lesions throughout the nervous system including sensory loss, mild leg weakness, and visual loss. As a result, falls are a major source of disability in the aging population and especially in persons suffering from Parkinson's disease. Since with each fall, the patient is at risk of head injury, hip fracture or other injuries, it seems wise to intervene before the individual sustains even their first fall. The use of the FR on a routine basis is easy, inexpensive, and helpful in predicting those individuals at risk for falling.

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Physician volunteers

ABSTRACT. *There is an increasing population of working poor in our community. They earn too little to afford health insurance, yet they don't qualify for government assistance. Physician volunteers in Howard County have joined together and developed a free clinic to meet this challenge.*

Mrs. Yan is a 47-year-old woman with insulin-dependent diabetes mellitus. Her husband left her four years ago. She has two young children and receives no child support payments. Mrs. Yan works part-time to the best of her abilities in a group home for seniors. She is unable to work full-time because of complications of her neuropathy, as well as poor glucose control. She cannot afford medical care or health insurance, but she does not qualify for medical assistance because of her part-time job. Mrs. Yan comes to the free clinic where a volunteer physician does a complete evaluation, obtains full blood chemistries and a hemoglobin A_1c at no cost, thanks to the generosity of the local reference laboratory. She is able to obtain free insulin through the generosity of a local pharmacy. The doctor discovers a foot ulcer that is giving Mrs. Yan a great deal of pain. He refers her to a general surgeon, also a volunteer, for debridement of this lesion. Eventually, after follow-up visits, the patient's glycemic control improves dramatically, her foot ulcer heals, and she is able to obtain full-time work. Mrs. Yan eventually becomes financially stable and is able to obtain her own insurance.

This scenario is being played out, not in the poor sections of Baltimore City, but in one of the wealthiest counties in the country – Howard County. In amongst its beautiful parks and trails and well-groomed neighborhoods are people who are not receiving adequate health care. These people are the working poor. Some live in subsidized housing. Many are refugees who have migrated to this country, escaping oppression in their homeland. Others are people suffering from chronic debilitating illnesses that may limit their ability to obtain the medical care and medications they need to sustain their health. In response to this problem, in 1995, Howard County primary care physicians and specialists organized themselves to combat this problem. Over 30 primary care physicians agreed to see these patients pro bono in their offices and to provide continuity of care. Over 100 specialists, representing virtually every area, have agreed to see these patients on a referral basis at no cost. A medical lab agreed to provide free laboratory services for these patients. American Radiology agreed to support diagnostic radiological studies at no cost. Howard County Hospital agreed to see these patients and hospitalize them without assessing a fee.

The patients accepted in this program were able to obtain services ranging from preventive immunizations to neurosurgery and hospice services. In 1997, over 220 patients were seen. Patients were referred from the Howard County health agencies, drug rehabilitation facilities, schools, and church organizations. With increasing demand, it became apparent that there was a need to consolidate services into one free clinic to more efficiently serve this population. To raise money to meet the operating costs of this project, a non-profit corporate status had to be achieved. Generously, a local law firm provided free legal counsel to achieve this end. Both active and retired nurses volunteer to staff this site and a staff coordinator was hired on a part-time basis, thanks to money generously granted by the professional staff. An initial core of 14 primary care physicians agreed to see these patients, sharing the care amongst them, every Wednesday night. Since the opening of this clinic last December, approximately four new patients are seen each week, and enter into the system for ongoing care. Local dentists have organized themselves and have agreed to provide free dental care to these patients as well. The Traditional Acupuncture Institute has agreed to provide complimentary alternative medical services for this population. Nutritionists from the hospital provide free counsel concerning all health and wellness issues.

Demand is outgrowing our ability to provide these services; 40 to 50 people are on a waiting list. There is a great need to raise additional funds to expand services, develop support infrastructure, and purchase medical supplies and medications not obtainable by the drug companies.

A great untapped resource in providing care for the indigent population is the retired physicians residing in the community. The major obstacle to their participation in this effort remains the high cost of malpractice insurance to protect them from liability. Whereas there is a Good Samaritan statute that protects them to some extent, it is both vague and unclear, and does not cover the cost of legal counsel if a suit was brought against them. Tort referendum or discount malpractice coverage is needed to protect those engaging in charity work.

Many people ask why Howard County physicians volunteer so readily to participate in this effort, given the major stresses the medical community has been subject to, the loss of autonomy in patient decision making, the rapid drop in just compensation for their work, and the increased liability exposure. The reasons are many. Rather than withdraw and become cynical in response to this current hostile medical climate, these physicians instead have chosen to embrace the calling which led them to choose a career in medicine to begin with: to care for and serve those who are suffering and in need. Caring for those who are most disadvantaged enriches their souls and reaffirmates their finest attributes. These physicians are taking on the responsibility and burden of caring for the community and demonstrating, through example, why they should be the leaders in making policy for health care in this country, a role that has been usurped by many insurance carriers who prioritize financial objectives over health concerns. Their generosity demonstrates to the community at large that they are willing to be the flag bearer to restore the quality of health care in this country. Indeed, in caring for these patients, there are no case managers to deal with. It is apparent that if similar efforts were made in other communities throughout the state, many people who have fallen between the cracks would have a chance to obtain a life with dignity and respect, and to reestablish control of their lives. The time has come for physicians to lead the charge for superior health care, rather than simply be reactive to the forces that threaten the very foundation of health care in this country today.

GARY A. MILLES, M.D., M.P.H.

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July/August, 1999
Selected Communicable Diseases in Maryland in 1998
(Continued from May/June, 1999)

Please refer to the May/June issue for a description of communicable disease surveillance in Maryland and for Tables 1 "Cases" and 2, "Rates of Selected Notifiable Diseases Reported in Maryland in 1998 by County". The most recently available U.S. counts and rates (1997) are included for comparison. All incidence rates in this article are expressed as cases per 100,000 population per year. All rate maps place cases by county of residence at the time of diagnosis. The spot maps place cases within their *zipcode* of residence, but with *county* boundaries displayed on those maps. A few minor changes have been made to some case counts published in the May/June issue. Please contact the Division of Communicable Disease Surveillance for up-to-date table of cases and rates (410-767-6712).

BOTULISM

MD 1998	**Cases:**	**1**	**Rate:**	**0.02/100,000**
U.S. 1997	**Cases:**	**132**	**Rate:**	**0.05/100,000**

Clostridium botulinum type B toxin was isolated from the stool of a 5 week old infant who exhibited lower and upper extremity muscle weakness, constipation, dilated pupils, symmetrical facial paralysis, decreased gag reflex, respiratory impairment, ocular abnormalities, and abnormal mental status. Hospitalization occurred 48 hours after onset of symptoms and botulism immune globulin was administered 72 hours after onset. The infant recovered with supportive care and without sequelae. The source of the infection was not identified. The infant exhibited no obvious wounds and was both breast-fed and given formula prior to onset.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE

MD 1998	**Cases:**	**57**	**Rate:**	**1.1/100,000**
U.S. 1997	**Cases:**	**1,162**	**Rate:**	**0.44/100,000**

The 57 reported cases of invasive disease due to *Haemophilus influenzae* (all serotypes and among all ages) included bacteremia (35 cases, 61%), pneumonia (14 cases, 25%), meningitis (5 cases, 9%), and other infections (3 cases, 5%). Figure 1 illustrates the trend for invasive *Haemophilus influenzae* disease for the past 12 years (1987-1998). Active surveillance for *H. influenzae* disease of all serotypes and among all ages began in November of 1991. Figure 2 illustrates the geographic distribution of the 1998 cases.

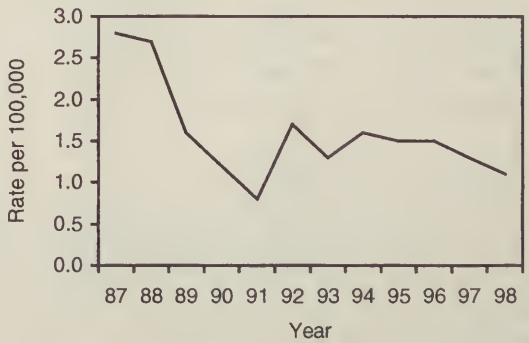


Figure 1. *Haemophilus influenzae* invasive disease (all serotypes). Incidence in Maryland, 1987-1998.

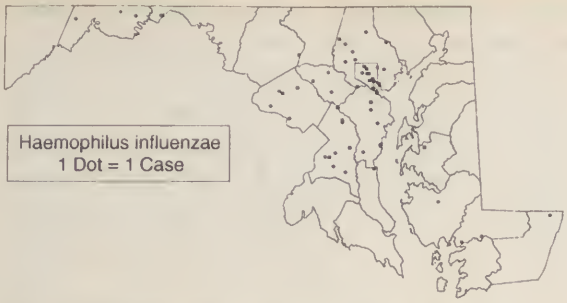


Figure 2. *Haemophilus influenzae* invasive disease (all serotypes). Maryland, 1998.

For the 54 cases whose outcome was known, the 1998 case fatality rate was 5.4%, less than one-half the 1997 rate of 11.1%.

The age of cases ranged from one day old to 90 years. There was only one 57-month-old child with *H. influenzae* bacteremia in the vaccine preventable age category (children 2-59 months of age). Since that child was age appropriately immunized against *H. influenzae* type b (Hib) and the *H. influenzae* was not type b, there were no preventable cases of Hib disease in children! Six other cases were less than 2 months old -- too young to be immunized. Figure 3 compares cases in the vaccine preventable age group to cases in all other ages for 1990 through 1998.

The serotypes of the 48 (84%) cases of *H. influenzae* that had isolates available for testing were 29% serotype b, 38% other serotypes, and 33% nontypeable.

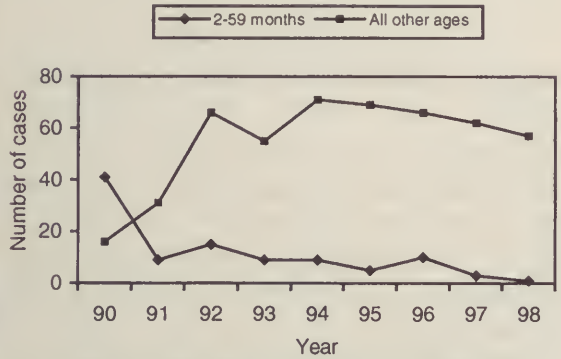


Figure 3. *Haemophilus influenzae* invasive disease (all serotypes). Cases reported by age group, Maryland, 1990-1998

HEPATITIS A

MD 1998 Cases: 416 Rate: 8.1/100,000
U.S. 1997 Cases: 30,021 Rate: 11.22/100,000

In addition to the 413 cases of acute hepatitis A reported in the Table 1a of the May/June issue, an additional 3 cases were reported from Baltimore City bringing the total number of reported acute hepatitis A cases to 416 for 1998. This is more than double the 188 cases (3.7/100,000) reported in 1997,. and it represents the largest number of reported acute hepatitis A cases since 1990 when 866 cases were reported (Figure 4). Baltimore City and Baltimore County accounted for 60% of the reported hepatitis A cases statewide with 130 and 121 cases respectively. The highest annual rates of disease were also reported in Baltimore City (19.7) and Baltimore County (16.7), with Kent County (15.7) reporting the third highest rate (Figure 5). The recent increase in cases is centered in the Baltimore Metropolitan Area (BMA) which consists of Baltimore City, Anne Arundel, Baltimore, Carroll, Harford, and Howard counties. The annual rate for the BMA, which accounted for 48% of the state's population, was 13.2 while the rate for the non-BMA was 3.4.

The ratio of male to female cases was 2.2:1. The case ratio of whites to non-whites was 4.0:1 and the rate among whites was 8.5 while the rate among non-whites was 4.8. The highest annual rates were seen in white males (11.6), followed by non-white males (6.9), then white females (5.4), and finally non-white females (2.9). Adults 20 to 24 years had the highest rate (16.2) followed by those age 35 to 39 (14.9), and age 25 to 29 years (13.1). Overall, people age 20 to 49 accounted for 71% of all reported acute hepatitis A cases in 1998.

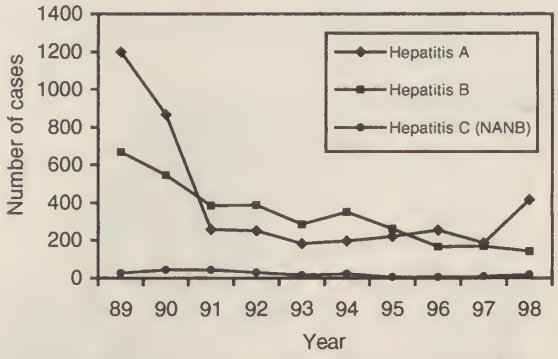


Figure 4. Hepatitis A, B, C (NANB). Cases reported Maryland, 1989-1998.

Of the 346 cases reporting an occupation, 28 (8.1%) reported jobs with increased risk of acquiring or transmitting hepatitis A: 15 foodhandlers, 11 health care providers, and 2 child care providers. Among 352 cases for whom travel history was available, 41 (12%) had traveled outside of the U.S. or Canada. A history of contact with other hepatitis A cases was available for 320 cases; 73 (23%) reported contact with a confirmed hepatitis A case prior to onset (18 sexual contact, 28 household contact, 27 other

contact). Of 339 cases who could recall whether they ate raw shellfish in the 2 to 6 weeks prior to onset, 48 (14%) reported eating raw shellfish.

A total of 6 outbreaks of hepatitis A were reported during 1998; settings for the outbreaks included 2 food service establishments, 1 school, 1 detention center, 1 private home, and 1 community-based outbreak.

In 1997, 2.5% of cases reported injection drug use while in 1998, 13.7% of cases reported injection drug use (p-vale<0.001).



Figure 5. Hepatitis A. Incidence in Maryland, 1998.

HEPATITIS B

MD 1998	**Cases:**	**143**	**Rate:**	**2.8/100,000**
U.S. 1997	**Cases:**	**10,416**	**Rate:**	**3.90/100,000**

The incidence rate per 100,000 in 1998 (2.8) has declined 18% from the 1997 rate (3.4) The trend in reported cases over time is shown in Figure 4. The highest rates occurred in Worcester County (9.6), followed by Wicomico County (7.4) (Figure 6).

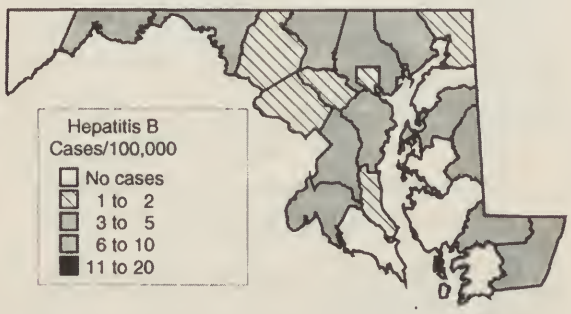


Figure 6. Hepatitis B. Incidence in Maryland, 1998.

The ratio of male to female cases was 1.7:1. The incidence rate was 3.6 in males and 2.0 in females. The incidence was highest in the 20-29 year age group for both males and females (Figure 7). Among the 90% of cases for which race was known, the rate in nonwhites (4.1) was 2.3 times higher than the rate in whites (1.8). Of the 69 adults with known occupation (excluding students and unemployed), none were reported to be health care providers with direct patient contact.

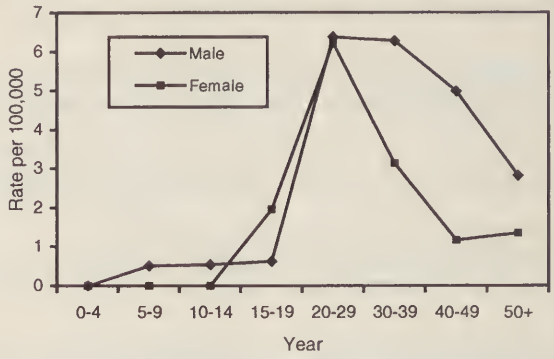


Figure 7. Hepatitis B. Incidence by age group and gender, Maryland, 1998.

Information was provided by 121 (85%) of the cases about exposures with potential risk for acquiring hepatitis B during the 6 months prior to their onset of illness. Sixty-nine (57%) of those reported the presence of one or more risky exposures; 50 reported a single risk factor while 19 reported multiple risk factors. The risk factors reported included multiple sexual partners (18), dental work or oral surgery (16), use of needles for injection of street drugs (14), contact with a confirmed or suspected case of hepatitis B (10), homosexual or bisexual orientation (8), tattooing (7), surgery (6), transfusion (5), an accidental stick or puncture with a needle or other object contaminated with blood (4), medical or dental field employee (2), association with a dialysis or kidney transplant unit (2), and acupuncture (1).

LEGIONELLOSIS

MD 1998	**Cases:**	**38**	**Rate:**	**0.74/100,000**
U.S. 1997	**Cases:**	**1,163**	**Rate:**	**0.44/100,000**

The 38 reported cases of legionellosis in 1998 (Table 1a in the May/June issue and Figure 8) represented a 65% increase over the number of cases reported in 1997 (23). Talbot County (1 case) had the highest incidence rate (3.0), followed by Harford (5 cases) and Washington (3 cases) counties, both with incidence rates of 2.3, while Baltimore County (12 cases) had an incidence rate of 1.7 (Tables 2a, 2b, May/June issue).

The male to female ratio was 1.4:1. Ages ranged from 28 to 90 years (median 54 years). The ratio of white to non-white was 2.0:1. Of the 23 cases on which information was available, 13 (56.5%) were smokers of more than 10 cigarettes a day. Of the smokers, 4 had diabetes, 2 were under systemic corticosteroid treatment, and 1 had renal dialysis.

Among the 10 non-smokers, 3 had diabetes, 2 were undergoing systemic corticosteroid treatment, and 1 had cancer. The sources of exposure noted for the 23 cases were work at a single manufacturing plant (6), stay or work in the hospital (6), and visiting a hospital as an outpatient (2). There were 3 deaths among the 36 cases with known outcome for a case fatality rate of 8.3%.

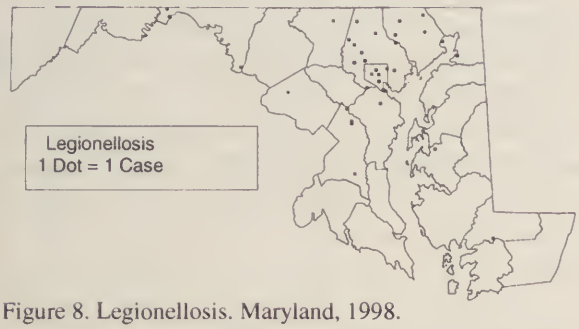


Figure 8. Legionellosis. Maryland, 1998.

LYME DISEASE

MD 1998	**Cases:**	**659**	**Rate:**	**12.8/100,000**
U.S. 1997	**Cases:**	**12,801**	**Rate:**	**4.79/100,000**

During 1998, 659 cases of Lyme disease were reported. Lyme disease increased 33% from 1997 (494 cases). Figure 9 shows a trend of increasing numbers of case reports since 1989. Figure 10 shows the geographic distribution of the residence of Lyme disease cases reported in 1998 and Figure 11 shows case incidence rates by jurisdiction. The highest rates occurred in Kent County (246.6), followed by Queen Anne's (77.9), Talbot (66.8), and Caroline (56.9) counties. No cases were reported from Allegany and Garrett counties.

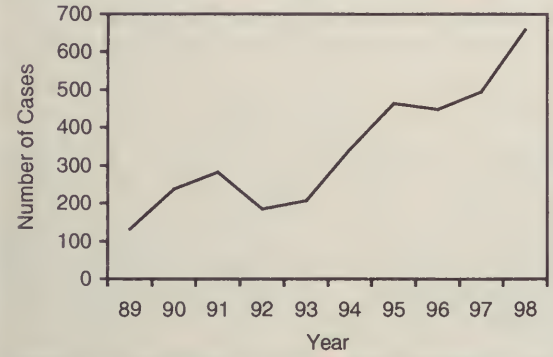


Figure 9. Lyme disease. Cases reported, Maryland, 1989-1998.

The male to female ratio was 1.2:1. Among the 539 cases with known race, 501 (92.9%) were white, 29 (5.4%) were black, and 9 (1.7%) were other races. Ages ranged from 6 months to 92 years (median 38 years). Thirty-two percent of the cases were less than 18 years of age.

The date of onset of illness was reported by 85% of the cases and 80% of those presented with onset of illness from May through September with the peak incidence occurring in June (31%) and July (26%).

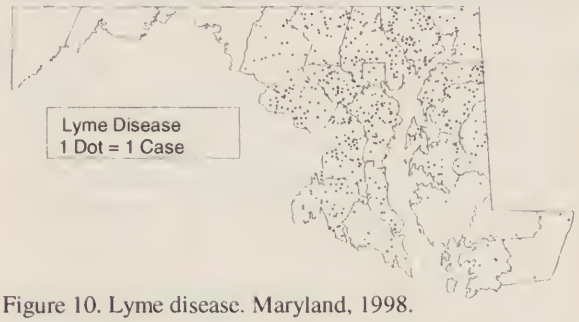


Figure 10. Lyme disease. Maryland, 1998.

A definite tick bite prior to onset was reported in 263 (40%) cases, while 167 (25%) had no known tick exposure, and 229 (35%) were uncertain.

Of the 659 cases, 394 (60%) had erythema migrans, 232 (35%) had joint swelling, 85 (13%) had Bell's palsy, 21 (3%) had radiculoneuropathy, 16 (2%) had lymphocytic meningitis, 12 (2%) had atrioventricular block, and 5 (<1%) had encephalitis. Fifty-four cases were hospitalized; no deaths were reported.

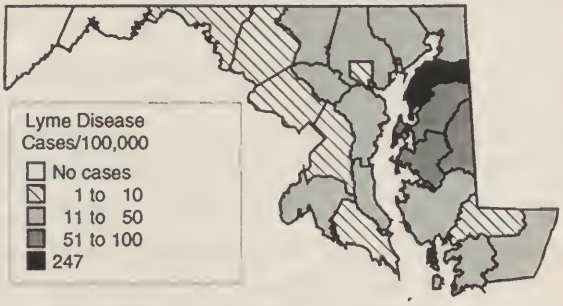


Figure 11. Lyme disease. Incidence in Maryland, 1998.

MALARIA

MD 1998	**Cases:**	**89**	**Rate:**	**1.7/100,000**
U.S. 1997	**Cases:**	**2,001**	**Rate:**	**0.75/100,000**

Eighty-nine cases of malaria were reported in 1998 compared to 85 cases in 1997. All cases were lab-confirmed.

Nine counties and Baltimore City reported malaria cases in 1998 (Figure 12, Table 1b – May/June issue). The majority of cases occurred in Montgomery County (41 cases, 46%) and Prince George's County (32 cases, 36%).

Cases were seen in males more often than females (ratio 2.7:1). For the 92% of cases with known race, blacks were affected most often, comprising 73% of cases. Whites and Asians accounted for 15% and 9%

respectively. The cases ranged in age from one day to 66 years, (median 32 years). Thirty-nine cases (44%) were hospitalized and no deaths were reported. Of the 58 cases for whom previous malaria status was known, 19% reported previous episodes.

Most of the cases (50 cases, 56%), were caused by *Plasmodium falciparum*. Seventeen cases (19%), were caused by *P. vivax*, three (3%), by *P. ovale*, and two (2%), by *P. malariae*. Seventeen cases (19%), were reported due to unidentified *Plasmodium* species.

Of the 89 cases, 88 were judged to be due to international import. Information about the remaining case was not available. In one case, congenital exposure was reported in a neonate whose mother had recently emigrated from Liberia. The location of import was known for 83 of the cases: 28% of these were imported from Nigeria, 15% from Ghana, 7% from Cameroon, 34% from other African countries; 6% were imported from Central America, 4% each from India, and Haiti.

The 50 cases due to *Plasmodium falciparum* were imported primarily from Nigeria (30%), Ghana (10%), Cameroon (10%), and other African countries (38%). *P. vivax* cases came from Africa (35%), Central America (24%), and the Indian subcontinent (24%). *P. malariae* was acquired from West Africa (1 case) and *P. ovale* from West Africa (2 cases) and Central America (1 case).

Of the 60 cases for which information on malaria prophylaxis was available, only 17 (28%) reported taking any prophylaxis prior to their illness.



Figure 12. Malaria (all species). Maryland, 1998.

MEASLES

MD 1998	**Cases:**	**1**	**Rate:**	**0.02/100,000**
U.S. 1997	**Cases:**	**138**	**Rate:**	**0.06/100,000**

The single case of measles reported in 1998 was an international importation. This continues a trend of interruption of measles transmission in Maryland. Figure 14 illustrates the trend in reported cases since 1989. The last known indigenously acquired case of measles in Maryland occurred 4 years ago, in 1994.

MENINGITIS (ASEPTIC)

MD 1998	**Cases:**	**314**	**Rate:**	**6.1/100,000**
U.S. 1997	**Cases:**	**N/A**	**Rate:**	**N/A**

The number of cases reported declined by 8.2%, from 342 cases in 1997 to 314 cases in 1998. There were two deaths among the 314 cases resulting in a case fatality rate of 0.6%. As in the previous six years, the two counties with the highest number of cases were Montgomery (62) and Prince George's (58) (Table 1a, May/June issue). The highest incidence rates were observed in Dorchester (13.3), Calvert (11.4), and Harford (10.5) counties (Table 2a, May/June issue). Half of the cases occurred during the four-month period from July to October.

The incidence rate for males was 6.4, slightly higher than the rate of 5.8 for females. The rate for non-whites was 6.2, slightly higher than the rate of 5.5 for whites (race was unknown for 21 of the cases). Age-related incidence was highest (47 cases, 13.1/100,000 population) for children under 5 years of age; children under 1 year of age accounted for 41 of these cases. For age groups between 5-44 years, rates fluctuated from 6.0 to 10.8. For persons 45 years and older, the rate fell sharply to 1.9.

MENINGOCOCCAL DISEASE

MD 1998	**Cases:**	**35**	**Rate:**	**0.7/100,000**
U.S. 1997	**Cases:**	**3,308**	**Rate:**	**1.24/100,00**

The number of reported cases decreased by 16.7%, from 42 cases in 1997 to 35 in 1998. From 1990 to 1997, the number of cases reported ranged from a low of 30 in 1994 to a high of 58 in 1996. In 1998, there were 8 deaths among the 35 cases for a case fatality rate of 22.9%; the rate was 9.5% in 1997. Relatively few of the 1998 cases presented with meningitis: 24 cases (68%) presented with meningococcemia, 8 (23%) with meningitis, 2 (6%) with pneumonia, and 1 (3%) with pericarditis.

Table 1a (May/June issue) and Figure 13 show the number of 1998 cases by jurisdiction. Baltimore City (13), Baltimore County (4), and Prince George's County (4) accounted for 60% of all cases; they comprise 42% of the State's population. There was slight, but not pronounced, clustering by month of onset -- three months, January-March, accounted for 37% of the 1998 cases.

The 1998 incidence rate for males was 0.6, about the same as the rate of 0.8 for females. The case rate for non-whites (1.1) was about twice the rate for whites (0.5). Four age groups accounted for over half (54%) of the reported cases: birth to 4 years (6 cases, all were under 1 year of age), 5-9 years (5), 15-19 years (3), and 50-54 years (5).

The DHMH Laboratory determined the serogroup for 26 of the 33 culture-confirmed cases: Y (18), C (5), and 1 each of serogroups B, W135, and Z. Of these 26 cases, 24 (92%) were caused by serogroups represented in the only vaccine licensed for use in the U.S.; that vaccine protects against serogroups A, C, Y, and W135.

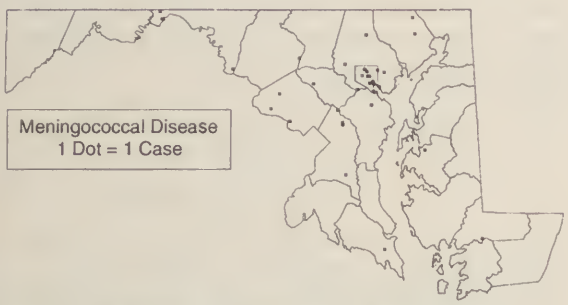


Figure 13. Meningococcal disease (all serogroups). Maryland, 1998.

MUMPS

MD 1998	**Cases:**	**0**	**Rate:**	**0/100,000**
U.S. 1997	**Cases:**	**683**	**Rate:**	**0.27/100,000**

1998 continues a trend toward elimination of mumps in Maryland (Figure 14). There were 33 reports of suspected mumps parotitis in 1998; all were ruled out by serology or by lack of any identifiable epidemiological link to a case.

PERTUSSIS

MD 1998	**Cases:**	**66**	**Rate:**	**1.3/100,000**
U.S. 1997	**Cases:**	**6,564**	**Rate:**	**2.46/100,000**

The number of pertussis cases reported in 1998 decreased by 45%, from the 119 cases reported in 1997. The trend over the past ten years is shown in Figure 14. Case counts by jurisdiction for 1998 are shown in Table 1a (May/June issue) and incidence rates are illustrated in Figure 15. Somerset County had 4 related cases and the highest rate in the State.

The ratio of male to female cases was 0.9:1. The ratio of whites to non-whites was 2.3:1. The race of six cases was unknown. Ages ranged from 22 days to 59 years. The median age was three years. Thirty cases (45%) were under age one year, including two (3%) newborns and 21 (32%) who were one to five months old.

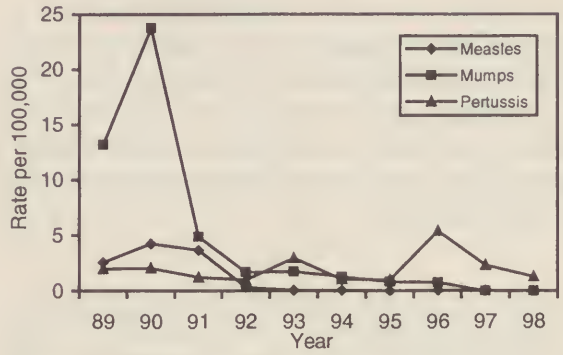


Figure 14. Measles, mumps, pertussis. Incidence in Maryland, 1989-1998.

The following symptoms were reported: paroxysmal cough (63, 95%); post-tussive vomiting (35, 53%); whoop (24, 36%); and apnea (16, 24%). No pertussis-related deaths were reported but 17 (26%) of the cases were hospitalized. Of the 43 cases (65%) that were cultured, 13 (30%) were culture positive. Nine (69%) of the 13 culture confirmed cases were also DFA positive.



Figure 15. Pertussis. Incidence in Maryland, 1998.

RABIES (ANIMAL)

MD 1998	**Cases:**	**439**	**Rate:**	**N/A**
U.S. 1997	**Cases:**	**8,105**	**Rate:**	**N/A**

The trend of animal rabies in Maryland over the last 17 years is shown in Figure 16. In 1998, 439 (8%) of the 5,329 animals submitted for rabies testing were found to be rabid, a significant decrease from the 619 laboratory confirmed rabid animals reported in 1997. Animal rabies was reported from all Maryland jurisdictions (Table 1a in the May/June issue, and Figure 17). Counties with the largest number of rabid animals were Anne Arundel (73), Frederick (41), Montgomery (41), Baltimore (30), and Prince George's (30) counties.

Since the raccoon rabies epizootic began in Maryland in 1981, raccoons continue to account for the majority of laboratory confirmed rabid animals.

Raccoons accounted for 79% of the rabid animals in 1998. Other animals found to be rabid included skunks (8%), foxes (6%), cats (3%), bats (2%), groundhogs (1%), cattle (<1%), dogs (<1%), and rabbits (<1%). The three rabid cattle and one of the rabid rabbits were infected with the raccoon variant of the rabies virus. The second rabid rabbit had contact with a raccoon but the virus variant was not determined.

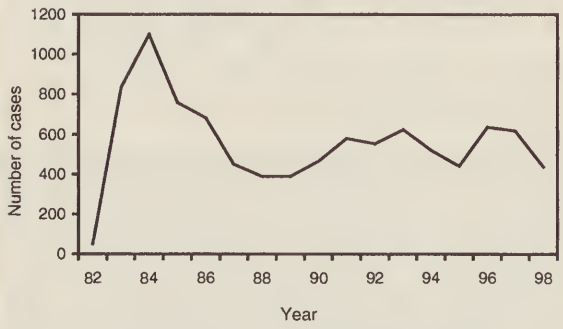


Figure 16. Animal rabies. Cases reported, Maryland, 1982-1998.

Rabid bats accounted for 8 (2%) of the positive animals. Rabies in bats is epidemiologically distinct from rabies in terrestrial animals and bats are increasingly implicated as important wildlife reservoirs for variants of rabies virus transmitted to humans. A Virginia man died during 1998 from an infection with a bat variant of the rabies virus. The last human case of rabies in Maryland resulted from a bat bite in 1976.



Figure 17. Animal rabies. Maryland, 1998.

ROCKY MTN. SPOTTED FEVER

MD 1998	**Cases:**	**18**	**Rate:**	**0.3/100,000**
U.S. 1997	**Cases:**	**409**	**Rate:**	**0.16/100,000**

In 1998, 18 cases of RMSF were reported from 9 counties (Table 1a, May/June issue). The highest incidence rates were reported from Caroline (16.7), Talbot (15.2), and Dorchester (6.6) counties (Table 2a, May/June issue). Figure 18 shows the distribution by jurisdiction. The number of reported cases declined slightly from 1997, when 20 cases were reported. Three of the cases were confirmed by a four-fold rise in antibody titer, while the remaining 15 (probable) cases had clinically compatible symptoms with a single IFA titer of ≥1:64.

Onsets occurred between April and November. Fifteen cases (83%) had onsets between May and July; July was the peak month, with 8 cases. The cases ranged in age from 7 to 65 years (median 42 years). Fifteen cases were male, making the male to female ratio 5:1. Among 17 cases where race was identified, 16 were white and one was black. Five cases (28%) were hospitalized and no deaths were reported. Exposure information was available for 17 cases; 11 cases reported a tick bite or attachment within 14 days of onset.



Figure 18. Rocky Mountain Spotted Fever. Maryland, 1998.

SALMONELLOSIS

MD 1998	**Cases:**	**931**	**Rate:**	**18.1/100,000**
U.S. 1997	**Cases:**	**41,901**	**Rate:**	**15.66/100,000**

In 1998, 931 cases of salmonellosis were reported in Maryland; 912 (98%) were culture-confirmed and the remaining 19 (2%) were probable cases that were epidemiologically linked to laboratory confirmed cases. The trend of reported cases of salmonellosis over the past ten years is shown in Figure 19. The number had remained fairly stable from 1990 through 1997, but this year incidence decreased approximately 20%. Incidence of the disease was highest in the warmer months, with 47% of onsets occurring from June to September. Salmonellosis rates by jurisdiction are shown in Figure 20. The highest rates were seen in Wicomico (39.3%), Kent (36.7%), and Caroline (26.7%) counties.

The male to female ratio was 0.9:1. The ratio of whites to non-whites was 1.6:1 (23% had unknown race). The highest incidence by five-year age groups

was in the birth to 4-year group (61.4) followed by the 5 to 9 year group (27.1). There were 207 hospitalizations for salmonellosis and 4 deaths.

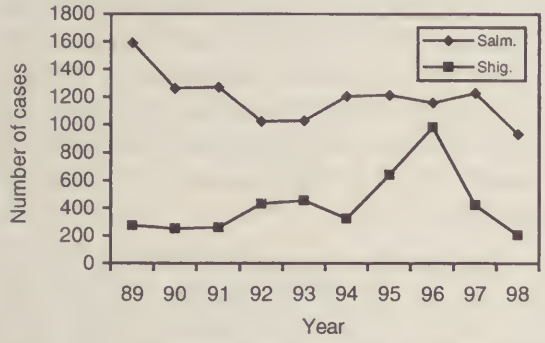


Figure 19. Salmonellosis and shigellosis. Cases reported, Maryland, 1989-1998.

Serotyping was completed for 713 (77%) isolates. The five most frequently reported serotypes were: *S.* Enteritidis (217, 30%), *S.* Typhimurium (204, 29%), *S.* Heidelberg (35, 5%), *S.* Newport (31, 4%), *S.* Thompson (27, 4%).

There were 12 outbreaks of salmonellosis reported by 7 counties. All of the outbreaks resulted from foodborne transmission. Five outbreaks occurred in restaurants, 2 involved caterers, 3 were in private homes, 1 in a correctional facility, and 1 by multi-state product contamination.



Figure 20. Salmonellosis. Incidence in Maryland, 1998.

Of the reported cases of shigellosis, 200 (99%) were laboratory confirmed and 2 (1%) were probable cases which were epidemiologically linked to laboratory confirmed cases. Fifty-five percent of the reported cases occurred in Montgomery and Prince George's counties that account for 31% of Maryland's total population. Somerset County reported the highest annual rate (20.3), followed by Montgomery (8.2), St. Mary's (8.1), and Prince George's (5.5) counties (Figure 21).

The ratio of male to female cases was 1.1:1. The ratio of cases among whites compared to non-whites was 1.2:1; the race of 44 cases (22%) was unknown. The highest incidence was seen in children age birth to 4 years (14.5) and children age 5 to 9 years (7.8), with these two groups accounting for 41% of all reported shigellosis cases during 1998. Thirty cases (15%) were hospitalized and there were no reported deaths from shigellosis during 1998.

The *Shigella* species was determined for 190 (95%) of the 200 isolates from lab confirmed cases. Of these, 115 (61%) were *S. sonnei*, 69 (36%) were *S. flexneri*, and 6 (3%) were *S. boydii*. There were no isolates of *S. dysenteriae* reported in 1998.

One outbreak of *S. sonnei* infection in a school setting was reported during 1998. No other shigellosis outbreaks were reported.

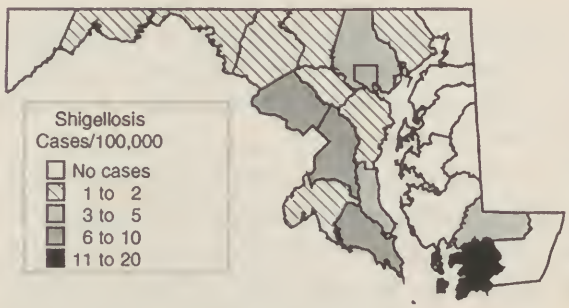


Figure 21. Shigellosis. Incidence in Maryland, 1998.

SHIGELLOSIS

MD 1998	**Cases:**	**202**	**Rate:**	**3.9/100,000**
U.S. 1997	**Cases:**	**23,117**	**Rate:**	**8.64/100,000**

Maryland reported 202 cases of shigellosis in 1998. This is a decrease (52%) from the 423 cases in 1997 and also represents the lowest number of annually reported shigellosis cases within the last ten years (Figure 19). The highest number of cases during this same time period was the 985 cases reported in 1996. The number of cases reported by jurisdiction is shown in Table 1a (May/June issue).

TUBERCULOSIS

MD 1998	**Cases:**	**324**	**Rate:**	**6.3/100,000**
U.S. 1997	**Cases:**	**19,851**	**Rate:**	**7.42/100,000**

The number of reported tuberculosis (TB) cases declined 5% from 1997 (340) to 1998 (324). The trend of reported TB cases since 1982 is shown in Figure 22. The number of cases by jurisdiction is shown in Table 1a (May/June issue) and Figure 23. Baltimore City, Montgomery, and Prince George's counties reported 26%, 23%, and 20%, respectively, of all cases in 1998.

The ratio of male/female cases was 1.2:1. Rates were highest among Asian (39.8/100,000, 75 cases), followed by Hispanic (14.1, 24 cases), black (11.9, 163 cases), and white (rate 1.8, 62 cases). Rates increased progressively with increasing age, with the lowest among children age under 14 years (1.9/100,000, 21 cases) and the highest rates occurring in those 65 years and older (12.8, 74). Forty four percent of all cases were foreign-born.

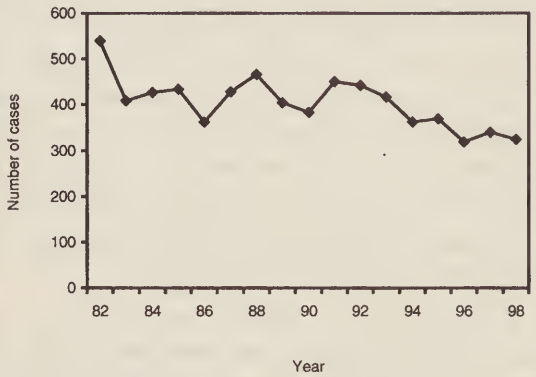


Figure 22. Tuberculosis. Cases reported, Maryland, 1982-1998.

A match of the TB and AIDS registries for 1998 identified 43 (13%) persons with both infectious diseases, compared to 50 (15%) in 1997, 30 (10%) in 1996, 39 (11%) in 1994, and 41(10%) in 1993.

Drug resistance has not been a significant problem in Maryland. In 1998, only 18 (5%) of the reported cases were isoniazid (INH) resistant, 3 (0.9%) rifampin resistant, and 2 (0.6%) resistant to at least INH and rifampin.

Directly observed therapy (DOT) (the observation by trained health care workers of every dose of medication taken) is still a high priority public health strategy in Maryland. In 1998, 91% of patients diagnosed received DOT compared to 90% in 1997, 86% in 1996, 82% in 1995, 73% in 1994, and 33% in 1993.

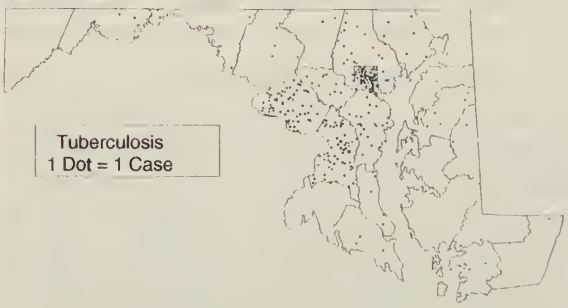


Figure 23. Tuberculosis. Maryland, 1998.

TYPHOID FEVER

MD 1998 Cases: 11 Rate: 0.2/100,000
U.S. 1997 Cases: 365 Rate: 0.14/100,000

Cases were reported from Montgomery (5), Prince George's (2), Howard (2), Wicomico (1) counties, and Baltimore City (1). The ratio of male to female cases was 1.8:1. Six cases were Asian, 2 were black, one was white, 1 was of "other" race; the race of one case was unknown. Ages ranged from two to 59 years (mean 22 years). Eight cases were hospitalized; no deaths occurred.

International travel accounted for nine of the cases. The countries visited were Pakistan (2), India (2), Burkina Faso (1), the Dominican Republic (1), Guatemala (1), Indonesia (1), and Vietnam (1). Two cases reported no foreign travel, and no source could be identified.

SEXUALLY TRANSMITTED DISEASES

CHLAMYDIA INFECTIONS

MD 1998 Cases: 13,450 Rate: 262/100,000
U.S. 1997 Cases: 526,671 Rate: 197/100,000

Chlamydia trachomatis continues to be the most frequently reported sexually transmitted disease in Maryland: 13,450 cases were reported in 1998. Maryland counties reported a 1.4% decrease compared to 1997, while Baltimore City noted a 6.6% decrease. Baltimore City accounted for 42% of the reported cases.



Figure 24. Chlamydia infection. Incidence in Maryland, 1998.

Eighty-five percent of cases were in the 15-29 year age group. Women represented 85% of the reported cases, a fact attributable to routine screening of women. Jurisdictions with rates exceeding 300 cases per 100,000 are Baltimore City (857), Somerset (567), Wicomico (474), Worcester (448), Dorchester (405), and Prince George's (373) counties (Table 2a in the May/June issue, and Figure 24).

GONOCOCCAL INFECTIONS

MD 1998 Cases: 11,284 Rate: 219/100,000
U.S. 1997 Cases: 324,907 Rate: 121/100,000

Reported cases of gonorrhea decreased two percent from 1997. Since 1990, reported cases have declined 52 percent. Maryland and U.S. incidence rates for the last 10 years are shown in Figure 25. Baltimore City noted a 4% increase in 1998. County jurisdictions reported a decrease of 12%. The number of cases by jurisdiction is shown in Table 1a (May/June issue). Sixty-two percent of the cases were reported by Baltimore City, which also accounted for the highest rate (1058) in the State. The counties with the highest rates were Dorchester (352), Wicomico (245), and Prince George's (243) (Figure 26).

The age distribution of the cases was similar to previous years; 81% of the cases were reported in the 15-34 year age group.

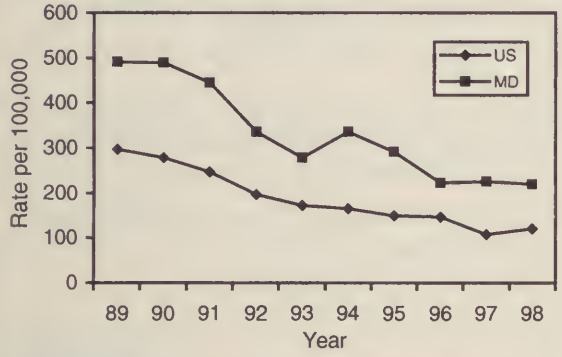


Figure 25. Gonococcal infection. Incidence in Maryland and the United States, 1989-1998.

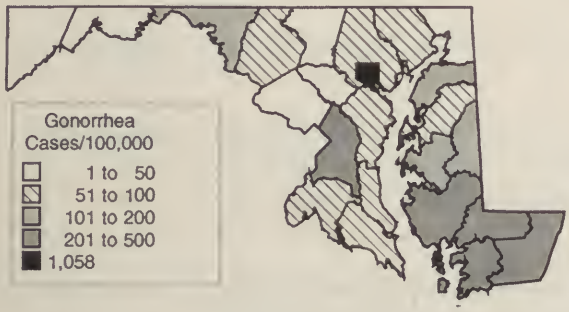


Figure 26. Gonococcal infection. Incidence in Maryland, 1998.

SYPHILIS, PRIMARY AND SECONDARY

MD 1998 Cases: 665 Rate: 12.9/100,000
U.S. 1997 Cases: 8,550 Rate: 3.19/100,000

The 665 cases of primary and secondary (P&S) syphilis reported in 1998 represents a 25% decrease from the 888 cases reported in 1997. Figure 27 shows the trend of P&S reported in Maryland over the past 10 years. The number of cases by jurisdiction is presented in Table 1a (May/June issue). Rates by jurisdiction are shown in Table 2a (May/June issue) and in Figure 28. For the fourth consecutive year, Baltimore City was primarily responsible for the high incidence of infectious syphilis and accounted for 73% of all case reports in Maryland.

The ratio of male to female cases was 1.1:1. The race of 94% of the cases was specified as nonwhite. Sixty percent of the cases were in the 20-39 year age group.

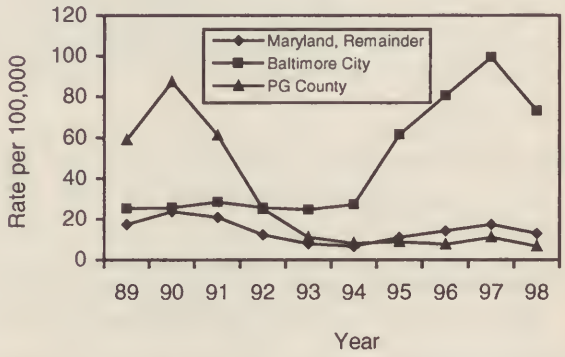


Figure 27. Primary and secondary syphilis. Incidence in Maryland, 1989-1998.

The number of congenital syphilis cases (47) decreased 22% from 1997 due to reduced case numbers in Baltimore City. However, Maryland county jurisdictions experienced an increase from 5 congenital syphilis cases in 1997 to 15 in 1998. The following jurisdictions reported cases: Baltimore City (32), Prince George's (6), Montgomery (3), Baltimore (2), Howard (2) and one each in Washington and Wicomico counties.



Figure 28. Primary and secondary syphilis. Incidence in Maryland, 1998.

The Johns Hopkins Medical Institutions

All courses are at the Thomas B. Turner Building unless otherwise indicated. For information on continuing medical education activities, contact the Office of Continuing Medical Education, 720 Rutland Ave., Baltimore, MD 21205, 410-955-2959, Fax 410-955-0807 (e-mail: cmenet@som.adm.jhu.edu).

Johns Hopkins internal medicine board review course, sponsored by the department of medicine, Johns Hopkins Hospital at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 52.5 Cat 1 AMA credits. Fee: $850/physicians; $800/residents. **July 31–Aug. 5**

Women's cancer issues for the generalist, sponsored by the John Hopkins University School of Medicine at Manor Vail Lodge, Vail, Colorado. Credits: 6 Cat 1 AMA credits. Fee: $195/physicians; $155/residents, allied health professionals. **Aug. 6–7**

Fifth annual topics in infectious diseases for primary care, sponsored by the department of medicine, Johns Hopkins University School of Medicine at Eldorado Hotel, Santa Fe, New Mexico. Credits: 15.5 Cat 1 AMA credits. Fee: $500/physicians; $350/residents, fellows, allied health professionals. **Aug. 8–11**

Perioperative management, sponsored by the Johns Hopkins University School of Medicine at The St. Regis Aspen Hotel, Aspen, Colorado. Credits: 21 Cat 1 AMA credits. Fee: $550/physicians; $515/residents, fellows, CRNAs, allied health professionals. **Aug. 16–19**

Lipid disorders training center programs, basic course, sponsored by Johns Hopkins University School of Medicine and Johns Hopkins Lipid Clinic. Credits: 1 Cat 1 AMA credit. **Sept. 2–4**

27th annual current topics in geriatrics (a board review), sponsored by The Johns Hopkins University School of Medicine and Johns Hopkins Geriatrics Center at the Renaissance Harborplace Hotel Baltimore, Maryland. Credits: 22.5 Cat 1 AMA credits. Fee: $425/physicians; $325/residents, fellows, allied health professionals. **Sept. 16–18**

Pediatrics for the practitioner - update '99, sponsored by the Johns Hopkins Children's Center and the Johns Hopkins University School of Medicine. Credits: 14 Cat 1 AMA credits. Fee: $325/physicians; $225/residents, fellows, allied health professionals. **Sept. 23–24**

Lipid disorders training center programs, advanced update, sponsored by Johns Hopkins University School of Medicine and Johns Hopkins Lipid Clinic. Credits: 1 Cat 1 AMA credit. **Sept. 25**

Fifth annual Johns Hopkins hepato-biliary update, sponsored by the departments of medicine and surgery, Johns Hopkins University School of Medicine, at Dunes Manor Hotel, Ocean City, Maryland. Credits: 9 Cat 1 AMA credits. Fee: $350/physicians; $175/residents, fellows, allied health professionals. **Sept. 25–26**

41st annual Emil Novak memorial course gynecology, gynecological pathology, endocrinology, and high-risk obstetrics, sponsored by Johns Hopkins University School of Medicine and the department of obstetrics and gynecology at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 45 Cat 1 AMA credits. Fee: $950/physicans; $750/residents, fellows, allied health professionals. **Oct. 17–22**

2nd annual gynecologic pathology: approaches to common problems with emphasis on new entities and techniques, sponsored by the department of pathology, Johns Hopkins University School of Medicine, at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 14 Cat 1 AMA credits. Fee: $500/physicians; $250/residents, fellows, allied health professionals. **Oct. 29–30**

The Johns Hopkins Medical Institutions continued

Advanced pediatric life support courses, sponsored by Johns Hopkins University School of Medicine and the Johns Hopkins Pediatric Trauma Center. Credits: 21 Cat 1 AMA credits. Fee: $675. — **Nov. 8–10**

3rd annual Johns Hopkins clinical research symposium: clinical trials and tribulations in 2000 and beyond, sponsored by the Johns Hopkins University School of Medicine. Credits: 7.5 Cat 1 AMA credits. Fee: $250/physicians; $200/residents, fellows, allied health professionals. — **Dec. 3**

University of Maryland School of Medicine

For each course, additional information may be obtained by contacting the Program of Continuing Education, University of Maryland School of Medicine, Room 14-011, BRB, 655 W. Baltimore St., Baltimore, MD 21202 (410-706-3956), or by calling the phone number listed after a specific program. Fax 410-706-3103.

Problem solving in diagnostic radiology, sponsored by The University of Maryland at The Homestead 1776, Hot Springs, Virginia. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 12–15**

Understanding retina surgery for the comprehensive eyecare specialist and eye MD, sponsored by University of Maryland School of Medicine in conjunction with the Maryland Center for Eye Care, at BWI Airport Hotel, Baltimore, Maryland. Info: Tina Simmons, (410)328-5934, Fax: (410)328-6346. — **Oct. 1**

Miscellaneous

Breast imaging today and tomorrow, sponsored by the International Institute for Continuing Medical Education, Inc. at the La Fonda Hotel, Santa Fe, New Mexico. Fee: $750/physicians; $550/residents, fellows, mammographers. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 2–5**

Asthma physician preceptorship program, sponsored by Washington University School of Medicine, at The Asthma Center, 1040 North Mason Road, Suite 112, St. Louis, Missouri. Credits: 8.5 Cat 1 AMA credits. Fee:$425. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087. e-mail: CME@msnotes.wustl.edu. — **Aug. 11**

The International Skeletal Society annual meeting and course, sponsored by The International Skeletal Society, and the University of California, San Diego at the Westin Hotel, Seattle, Washington. Fee: $750/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 18–21**

Imaging in Tuscany, sponsored by The International Institute for Continuing Medical Education, Inc. at the Relais Fattoria Vigwale, Radda in Chianti, Italy. Fee: $895. Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Aug. 30–Sept. 3**

Advanced MR imaging, sponsored by the International Institute for Continuing Medical Education, Inc. at the Hotel InterContinental, Montreal, Quebec, Canada. Fee: $750/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. — **Sept. 3–5**

Miscellaneous continued

Echocardiography as a definitive diagnostic modality and therapeutic guide: a case study seminar on interpretation of 2-D, Doppler, TEE, stress echo and contrast, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 20 Cat 1 AMA credits. Info: (800)253-4636, ext. 654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Sept. 16–18**

Pharmacotherapy of sepsis and ARDS, sponsored by the Washington School of Medicine, St.Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Sept. 17**

Marcom 111: mid-atlantic regional conference on occupational medicine, sponsored by the Virginia Commonwealth University Medical College of Virginia, at the Philadelphia Marriott, Philadelphia, Pennsylvania. Credits: 16 Cat 1 AMA credits. Fee: $375. Info: Nancy Mervis, (800) 413-2872, (804)828-3640, Fax: (804)828-7438. **Sept. 17–19**

BJC/BJH quality and clinical effectiveness, sponsored by the Washington School of Medicine, St.Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Sept. 18**

Magnetic resonance: the contemporary cardiovascular imaging, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 21.5 Cat 1 AMA credits. Info: (800)253-4636, ext. 654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Sept. 23–25**

Liver & kidney transplant update, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Sept. 25**

Internal derangements of joints: advanced & intensive MR imaging, sponsored by the International Institute for Continuing Medical Education, Inc., at MGM Grand Hotel, Las Vegas, Nevada. Fee: $750/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 24–26**

Mammography in Edinburgh, sponsored by the International Institute for Continuing Medical Education, Inc., at the George Intercontinental Hotel, Edinburgh, Scotland. Fee: $895/physicians; $695/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 27–30**

Breast imaging update, sponsored by the International Institute for Continuing Medical Education, Inc., at the Westin Resort, Hilton Head Island, South Carolina. Fee: $750/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770) 641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Sept. 30–Oct. 1**

4th annual fingers to toes orthopaedic review for PCPs, sponsored by the Washington School of Medicine, St.Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Oct. 1–2**

Breast imaging & interventions update, sponsored by the University of California, San Diego, School of Medicine, at the Hotel Del Coronado, San Diego, California. Credits: 15 Cat 1 AMA credits. Fee: $475/physicians; $350/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 1–3**

Management of cardiac arrhythmias in daily practice: featuring case presentations, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 17 Cat 1 AMA credits. Info: (800)253-4636, ext. 654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Oct. 4–6**

Miscellaneous continued

24th annual San Diego postgraduate radiology review, sponsored by the University of California, San Diego, School of Medicine, at the Hotel Del Coronado, San Diego, California. Credits: 39 Cat 1 AMA credits. Fee: $995/physicians; $700/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 4–8**

Infectious disease '99 board review course, sponsored by The Center for Bio-Medical Communication, at the Ritz Carlton Hotel, Tysons Corner, McLean, Virginia. Credits: 36 Cat 1 AMA credits. Fee: $945/physicians; $745/physicians-in-training. Info: Center for Bio-Medical Communications, Inc., (201) 342-5300, Fax: (201)342-7555, e-mail: cmeinfo@cbcbiomed.com. **Oct. 6–10**

19th annual comprehensive review of vascular and interventional radiology, sponsored by the University of California, San Diego, School of Medicine, at the Hotel Del Coronado, San Diego, California. Credits: 18.75 Cat 1 AMA credits. Fee: $550/physicians; $375/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 8–10**

Mt. Sinai 1999 body imaging update, sponsored by the International Institute for Continuing Medical Education, at The Plaza Hotel, New York, New York. Credits: 22.5 Cat 1 AMA credits. Fee: $775/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 9–12**

Mt. Sinai 1999 brain, spine, neurovascular and ENT imaging update, sponsored by the International Institute for Continuing Medical Education at The Plaza Hotel, New York, New York. Credits: 25.5 Cat 1 AMA credits. Fee: $795/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 13–17**

Contemporary nuclear cardiology: state-of-the-art review, case studies/practical concepts, managed care and latest licensing issues, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 21.5 Cat 1 AMA credits. Info: (800) 253-4636, ext. 654, (301) 897-5400, ext. 654, Fax: (301) 897-9745. **Oct. 14–16**

8th annual wound care symposium, sponsored by the Virginia Commonwealth University Medical College of Virginia Campus, at the Williamsburg Marriott Hotel, Williamsburg, Virginia. Credits: 15 Cat 1 AMA credits. Fee: $380. Info: (800)413-2872, (804)828-3640, Fax: (804)828-7438. **Oct. 15–17**

51st annual state-of-the-art conference: challenges and controversies in occupational medicine, sponsored by the American College of Occupational and Environmental Medicine, at the Hyatt Regency San Antonio, San Antonio, Texas. Info: ACOEM, (847)818-1800, ext. 389; Fax 847- 818-9266; http://www.acoem.org. **Oct. 17–21**

Cardiac ascultation for physician assistants, nurse practitioners, and cardiac nurses, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 19 Cat 1 AMA credits. Info: (800) 253-4636, ext. 654, (301) 897-5400, ext. 654, Fax: (301)897-9745. **Oct. 20–22**

Allergy abroad '99, sponsored by the Washington University School of Medicine at Paris, Dijon, Lyon, and Montpellier, France. Credits: 18 Cat 1 AMA credits. Fee: $495/physician; $395/allied health professional ($545 and $445, respectively, after August 15). Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, e-mail: CME@msnotes.wustl.edu. **Oct. 20–31**

25th annual symposium of obstetrics and gynecology, sponsored by the Washington School of Medicine, St.Louis, Missouri. Info: (314) 362-6891, (800) 325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Oct. 21–22**

Miscellaneous continued

Advances in obstetrics & gynecology, sponsored by the Virginia Commonwealth University at the Omni Richmond Hotel, Richmond Virginia. Credits: 14 Cat 1 AMA Credits. Fee: $425. Info: (800)413-2872, (804)828-3640, Fax: (804)828-7438. **Oct. 21–23**

New techniques in urinary incontinence and female urology, sponsored by the Washington School of Medicine, presented by the division of urologic surgery, at the Eric P. Newman Education Center, Washington University Medical Center, St. Louis, Missouri. Credits: 8 Cat 1 AMA credits. Fee: $250/physicians; $150/physician-in-training, allied health professionals. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Oct. 23**

Contemporary cardiothoracic surgery, sponsored by the Washington School of Medicine, presented by the division of cardiothoracic surgery, at the Eric P. Newman Education Center, Washington University Medical Center, St. Louis, Missouri. Fee: $625 (combined course). Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Oct. 28–30**

6th annual current topics in cardiothoracic anesthesia, sponsored by the Washington School of Medicine, presented by the division of cardiothoracic anesthesia, at the Eric P. Newman Education Center, Washington University Medical Center, St. Louis, Missouri. Fee: $425/physician; $250/CRNA, RN, PA, perfusionist. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Oct. 28–30**

PHYSICIAN'S RECOGNITION AWARD

For the month of April 1999, the physicians listed below received the American Medical Association (AMA) Physician's Recognition Award. Established in 1968, the award's purpose is to encourage physician participation in continuing medical education and to recognize those physicians who have voluntarily completed programs of continuing medical education.

Thomas Ernest Allen
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Gene Francis Ashe
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Sheila Murphy Idzerda
Jonathan C. Javitt
Kevin Brian Knopf
Susan Mary Levy
Andrew Douglas Logue
Ronald W. Luethke
Patrick David Mansfield
Harvey Nelson Mininberg
Rebecca Ann Salness
Jeffrey C. Schultz
Sheo Pratap Sharma
Joannie Chungli Shen
David Strobel

Miscellaneous continued

Comprehensive gynecology: a clinical update for the practicing physician, sponsored by the Center for Bio-Medical Communications, at the Roosevelt Hotel in New York. Credits: 14 Cat I AMA credits. Fee: $520 ($600 after 9/15). Info: (201) 342-5300, Fax: (201)342-7555, e-mail: cmeinfo@cbcbiomed.com. **Oct. 29–31**

Physician executive leadership, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314) 362-6891, (800) 325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Nov. 5–6**

Clinical applications of Buddhist psychology, sponsored by Sheppard Pratt Health System, at the Conference Center at Sheppard Pratt, Baltimore. Info: (410)938-4592, Fax: (410)938-4596, e-mail: bjobson@sheppardpratt.org. **Nov. 6**

Clinical pulmonary update (Napa Valley), sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Nov. 11–14**

Academy of Psychosomatic Medicine 46th annual meeting, at the Hyatt Regency Hotel, New Orleans, Louisiana. Info: executive director, A.P.M., 5824 N. Magnolia, Chicago, Illinois 60660. **Nov. 18–21**

Minimally invasive surgery (Argentina), sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314) 362-6891, (800) 325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Dec. 3–5**

5th annual sports medicine for the primary care physician, sponsored by the Office of Continuing Medical Education, Virginia Commonwealth University, Medical College of Virginia Campus, in Williamsburg, Virginia. Credits: 16 Cat 1 AMA credits. Fee: $395. Info: Nancy Mervis, (800)413-2872, (804)828-3640, Fax: (804)828-7438. **Dec. 3–5**

Contemporary women's health issues, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Dec. 10**

Topics in cardiology, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Dec. 11**



October 15 - 17, 1999

1999 MedChi Convention & Bicentennial Gala

Sheraton Fountainebleau Ocean City, MD

The 1999 MedChi Convention will examine topics ranging from genetics to privacy and confidentiality to end-of-life issues. We have gathered speakers who are at the forefront of both the great technological changes overtaking our society and those who struggle to remain ethical in the face of them. Please note the following is a brief excerpt from this year's program (information is subject to change).

Friday, October 15

9:30 - 11:00 House of Delegates

11:00 - noon

Woodward History of Medicine Lecture

Sherwin B. Nuland, MD, author and Clinical Professor, Yale Medical School

12:00 - 1:30

Remembering Our Beginnings

As part of our Bicentennial celebration, Joseph Gagliardi, MD, will impersonate Dr. Dobbs, a colonial period physician. Lunch will be provided.

1:30 - 3:00 Part I

3:30 - 5:00 Part II

Privacy and Confidentiality: Navigating an Ethical Whirlpool

The Honorable Ben Cardin (invited), The Honorable Casper Taylor, Harol Eist, MD, past President of the American Pediatrics Association, and Lawrence Gostin, JD, LLD, Georgetown University School of Law (invited)

6:00 - 8:00

Cocktail Reception

Saturday, October 16

7:30 - 9:00

Comprehensive Financial Planning

9:00 - 11:00 Part I

11:30 - 12:30 Part II

Recreating Ourselves: Ethical Ramifications of Genetic Research

Jeremy Rifkin, author, activist and philosopher, J. Craig Venter, PhD, President & Director, The Institute for Genomic Research

Saturday, October 16 *(cont.)*

12:30 - 2:00

Fraud and Abuse Compliance Luncheon

2:00 - 5:00 ***House of Delegates Meeting***

2:00 - 3:00 ***Concurrent Breakout Sessions***

3:30 - 4:30 ***Concurrent Breakout Sessions***

7:00 - midnight

Bicentennial Gala Celebration

Enjoy an evening of cocktails, dinner and dancing! Tickets are $50/person.

Sunday, October 17

8:00 - 10:30

Med Mutual Breakfast and Seminar

10:30 - 12:00

"Damaged Care" Brunch

Back by popular demand, Barry Levy, MD and Greg LaGana, MD perform a musical spoof of health care in the 90s.

Early Bird Registration Rates (before Sept. 15)

$50	MedChi member	$200	Nonmembers
$50	Office Staff	$25	Students
$35	Spouse/Guest		

Registration Information

To receive a complete registration brochure, check out our website, www.medchi.org. Or contact Susan Brunt at (800) 492-1056, ext. 321.

Questions? Call Mary DuLaney at (800) 492-1056, ext. 308.

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Who are these guys, anyway?

As you walk through MedChi's headquarters, you can't help but wonder, "who are these guys?" MedChi owns almost 150 portraits of past presidents and other active members, all of which were donated to the Faculty. This issue will highlight some of the more interesting and valuable portraits in our collection.



Horace Hayden, 1769-1844

ARTIST: REMBRANDT PEALE

Horace Hayden is best known for founding the first dental school in the United States at the University of Maryland. He also had a keen interest in geology and discovered a mineral that bears his name, Haydenite. Although he began his career as an architect, he later received an honorary M.D. from Thomas Jefferson University. In addition to his work in the area of dentistry, Hayden served as a surgeon during the War of 1812, aiding the wounded during the Battle of North Point (1814).

Hayden's portrait is typical of a number of other works executed by the artist, Rembrandt Peale, to document scientific luminaries of his day. The portrait was lent to the National Portrait Gallery for an exhibit in 1992, which integrated the art of portraiture with the social history of the early republic.

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Guest Editor's Note

Now…in the 23rd year of the institution of American liberty

MedChi's bicentennial year is an appropriate occasion to reflect upon the contributions of the organization and its members to both Maryland and the nation. Two hundred years ago, a group of physicians concerned about the ethical practice of medicine petitioned the state legislature to charter a medical society. One of the oldest medical societies in the nation, MedChi was developed as a professional organization to restrict medical licensure to those with sufficient training. Public welfare was a primary concern.

To be certain that its members maintained a high level of familiarity with current medical thought, one of MedChi's first acts was to organize a library that would allow medical practitioners to access the current body of knowledge and thus benefit the recipients of their care. Within a few years, the membership turned its attention to the development of Maryland's first medical school.

MedChi has involved its members in professional as well as patient education programs, brought public health issues to the attention of lawmakers, and supervised the activities of the medical community to assure high standards of professional care and conduct. It has supported similar programs of the component city and county medical societies and numerous specialty organizations.

MedChi's leadership roles have been filled by the most respected practitioners in the state, as well as by renowned scholars from the academic medical centers of Maryland.

The current membership has undertaken programs emphasizing preventive medicine and health maintenance. The society has concerned itself with safety in the workplace, sensitive issues in biomedical ethics, management of communicable diseases, the physical and emotional health of the family unit, and the practice of affordable health care, both in and out of the hospital. Members have distinguished themselves by ably serving the medical needs of the military at both the federal and state levels.

The evolution of medical practice and the contributions to medical science are dramatically illustrated in Maryland. The introduction of professional health care to the pioneers of the western region, the eastern shore, and southern Maryland is a story of courage and dedication and a matter of civic pride. The history of Baltimore provides a kaleidoscopic view of the development of institutional medical care in this country from almshouse to sophisticated university medical center, and from public infirmary to private community hospital.

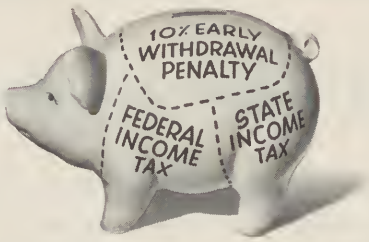
Medical research has found a comfortable home in this state. Consequently, investigation in the medical sciences has brought recognition in the form of the prestigious Passano, Lasker, and Nobel awards to Maryland-based scientists in numbers not fully appreciated by the general public. Institutes for the study and treatment of major physical and emotional illnesses, some federally sponsored, others anchored to our local medical centers, bring international recognition to Maryland physicians. The education of health professionals has developed from a handful of proprietary schools, no longer in existence, to world class academic medical centers in the state. Commercial involvement in the new wave of biomedical technology, intended to translate laboratory achievements into practical tools for the betterment of health, has put Maryland in a leadership role.

One might view these achievements as originating with the formal recognition of the medical profession in 1799 and the linkage, as depicted in the official seal of Med Chi, of this event with the 23rd year of the institution of American liberty.

Ronald H. Fishbein, M.D.
Guest editor

Dr. Fishbein has been chairman of the MedChi Bicentennial Committee since its inception in 1992. ■

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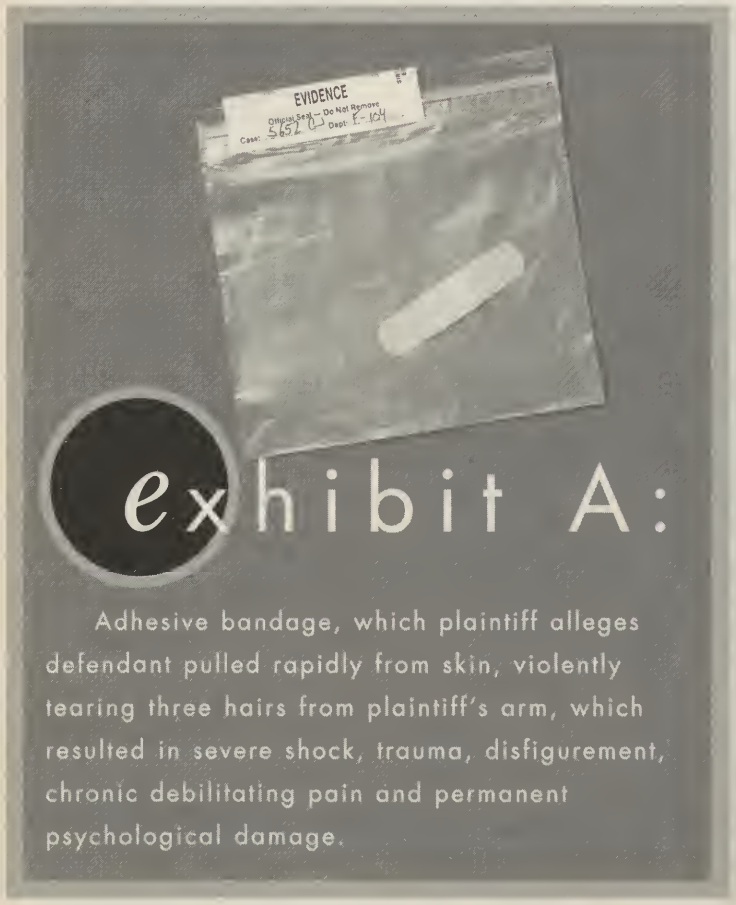
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Philip Thomas (1747-1815) Physician, patriot, politician

Two hundred years ago, Philip Thomas was one of 101 founding fathers of the Medical and Chirurgical Faculty of Maryland. His early life, education, and patriotic activities during the Revolutionary War are described. Details of his MedChi presidency are discussed.

Philip Thomas of Frederick County was the second president of the Medical and Chirurgical Faculty of the State of Maryland (**Figure 1**). He served as head of the society from 1801 to 1815, longer than any other leader of the Faculty.[1] A physician, patriot, and politician, he was a man of ability and importance in his day. He is considered by at least one authority on early Maryland history as "one of the most brilliant men of his time," an era that included the Revolutionary War and the War of 1812.[2]

Genealogy

Philip Thomas' grandfather, James Thomas, Sr., emigrated, with his English wife, from Wales to America during the reign of Queen Anne (1707-1714). James and his bachelor brother, Samuel, were "men of wealth, property and high standing." They settled in Chestertown, Kent County, Maryland, at that time the only deep-water port of the Chesapeake Bay, other than Annapolis.[3]

In his will, dated September 27, 1731, James Thomas, Sr., left his son James Thomas, Jr., a legacy of "one shilling sterling, and no more." Three other children, Rachel, Rebecca, and Samuel, received the same amount. Four younger heirs, from his second marriage to Elizabeth Hackett, were bequeathed equal shares in the remainder of his estate, which included several tracts of land known as Cornwallis' Choice and Covent Garden. The latter, a trace of one hundred acres, was purchased in 1707 for 10,000 pounds of tobacco.[4]

James Thomas, Jr., married Elizabeth Bellicum from New Castle County, Delaware, in 1740. They had four children: William, Rebecca, Sarah, and Philip. The older boy, William, showed promise as a scholar at an early age, having mastered Latin, Greek, Hebrew, and mathematics. He was studying medicine as an apprentice to a local physician when he died at the age of 19. Sarah and Rebecca outlived their father, but both died relatively young and unmarried.

Philip's father, James Thomas, Jr., mentioned in his will that he himself "was sick of body, but of sound and perfect memory." The loss of William apparently caused him to become depressed, as he mentioned that he had "spent a great deal of care and heavy expense educating him." James Thomas, Jr., died at age 41.

Philip was born on June 11, 1747, in Chestertown on the Eastern Shore. He, together with his two sisters, was included in his father's will, probated in 1761. The daughters each received a slave and a horse. Philip was bequeathed two slaves, a mare, a saddle, all clothing, and a small amount of money left in trust so that he could complete his education at the local Latin school.[5] James Thomas, Jr.'s, will made no mention of Elizabeth, his wife, who later married a Mr. Farrell and had three sons, one of whom lived at "Mt. Philip," Dr. Thomas' farm just southwest of Frederick City.

Medical education

The small inheritance left Philip Thomas was not sufficient for him to complete his medical education. Most historical sources state that Philip Thomas served a four-year apprenticeship with Dr. Thomas VanDyke in Philadelphia, the medical center of the colonies during the eighteenth century. Any medical education there added a great deal of prestige to a physician's practice. (To the contrary, a search of the archives of the Pennsylvania Medical School and the Philadelphia Medical Society showed no record of Dr. VanDyke [CB Greifenstein, M. Parris, personal communication]. Local church records, however, showed Dr. VanDyke was a local physician in Chestertown, Kent County.)

In his memoirs, Philip Thomas expressed his affection and appreciation for his preceptor, Dr. VanDyke, "whose talent and virtues were of sterling worth and whose instruction and knowledge with kindness to me are remembered with grateful respect." Philip Thomas did spend periods of time, during 1768 and 1769, studying in Philadelphia, attending lectures given by members of the faculty of the newly founded medical school. Drs. John Morgan, Thomas Bond, and William Shippen, Jr., gave him certificates "too flattering approbatory" and urged him to remain another season as a full-time student to earn his degree.[3]

It was not unusual for apprenticed medical students to attend classes part-time and, in fact, the new school encouraged this practice. However, it was expensive to spend a year of study in Philadelphia and Thomas' patrimony had become depleted to the point where it "required economy."[3]

While in the City of Brotherly Love, Philip Thomas worked in a bettering house where poor, sick, homeless citizens were made better, both physically and spiritually. He took care of patients and learned by making rounds with various visiting physicians. The term "bettering" may also have originated from the fact that the new almshouse was better than previous rundown shelters built and maintained by the benevolent Quakers.[7]

Philip Thomas did not return to Chestertown, but elected to settle in Frederick, then known as Fredericktowne, where there was more opportunity, with a growing, hardworking population, accessible land, and little competition. In less than two years, on Christmas Eve 1771, he was able to purchase a small stone house on the corner of West Patrick and Court streets for 542 pounds, which was a loan from a German patient. He was charged one peppercorn quit-rent, a tradition of paying an insignificant amount to acknowledge the original owner's legal right to collect rent.[8]



FIGURE 1. Portrait of Philip Thomas (1747 – 1815), artist unknown, circa 1790.
Reprinted by permission from the Maryland Historical Society.

He joined All Saints Parish and was able to meet many of the leading citizens. His practice flourished as his training and ability as a physician were recognized and appreciated. Overall, he spent 47 years as a practitioner. Newspaper notices of taverns, merchants, and new businesses frequently gave their location in town by referring to their proximity to Dr. Thomas' office.[9] In late 1772, he built a two-story brick house at 110 West Patrick Street on Lot 21 of the original Dulany plat (**Figure 2**). His neighbors at 108 West Patrick Street were John Hanson, Jr., and his family. On February 19, 1773, Philip Thomas married Jane Contee Hanson, daughter of John and Jane Hanson.

Patriot

John Hanson, Jr., was one of the most famous patriots of the Revolutionary War. As president of the Second Continental Con-

gress, when the Articles of Confederation were ratified in 1781, he became the first "acting president" of the new nation. Philip developed a close association with Hanson, which afforded him an opportunity to develop an interest in politics, a public service he pursued the rest of his life.

In the fall of 1773, the lower house of the Provincial Assembly in Annapolis passed a resolution that each of the 16 counties of Maryland form a Committee of Correspondence to keep citizens abreast of what was happening throughout the province and in the sister colonies. On June 20, 1774, a newly formed Committee of Observation of the Middle District of Frederick County met at the courthouse in Fredericktowne and appointed 18 of its members to attend an informal meeting to be held in Annapolis on June 22.[10] Philip Thomas, at the age of 27, was one of 92 deputies from throughout the province who attended this first, illegal convention, held from June 22 to 25 to discuss measures to counteract Parliament's passage of the Boston Port Bill, which closed Boston's harbor.[11] Those who attended such meetings in the colonies were considered rebels, and if caught, would be taken to England, tried, and hanged for treason.[12]

Philip Thomas worked as one of the principal members of both the Committee of Observation and Committee of Correspondence. Both organizations met continuously from September 12, 1775, until they were dissolved by Maryland's General Assembly on October 24, 1776.[13]

The local committees were given complete authority to govern the county with meetings held weekly at first, and later every fortnight. Special sessions were called frequently to handle emergencies. In addition, they were to recruit minutemen for the Continental army, organize the county militia, and purchase arms and ammunition.

The Fifth Maryland Convention also recommended that all able bodied freeholders from age 16 to 50, with a worth of 40 pounds or more, join the Association of Freemen and take the Oath of Fidelity. As a member of the Committee of Observation, Dr. Thomas was obliged to solicit this membership in his hundred and return the list for publication in a public place. (The term hundred was used to define an area in which an overage of 100 persons resided.)

Money was collected by subscriptions for arms and ammunition and a magazine was established just outside of Frederick City. It was to hold local supplies as well as ammunition transferred from Baltimore and Annapolis for safekeeping. Dr. Thomas was the supervisor of the magazine and regularly rendered an inventory.

The Committee of Observation heard civil and criminal cases, varying from trivial matters such as overcharging for salt, wool, or leather to more serious crimes. The lessor suits were settled with a reprimand, an apology, or a promise not to do it again. More serious charges, such as speaking out against the cause of freedom or being active as a tory or loyalist, were treated more harshly with fines and jail. Dr. Thomas was closely involved with the famous spy case of Drs. John Connolly and John Smith and their aide, Alley Cameron. These three British agents were captured in November 1775 by alert militiamen in Western Maryland near Hagerstown and were sent to Frederick for confinement and trial. Dr. Thomas was assigned to guard Dr. Connolly. Two sergeants and four privates were to guard him at the home of a Mrs. Charlton. The others were also guarded separately on the second floor of the same house. Dr. Smith escaped the night before the trio was to be transferred to the Congress in Philadelphia for trial.[14]

After this episode, Dr. Thomas requested permission from the Council of Safety to build a prison in Frederick. The authority was granted, but because there were no funds available, he was instructed to use a public lot and obtain building material from nearby forests. Subsequently, two small, stone gaols (i.e., jails) were erected at Council and West Second streets.

In colonial times, clergymen, physicians, and conscientious objectors were exempt from military service. As a practicing physician, Dr. Thomas volunteered for the militia when the Fifth



FIGURE 2. Home and office of Dr. Philip Thomas, 110 West Patrick Street, Frederick, Maryland. John Hanson's house is adjacent at 108 West Patrick Street.
Photograph courtesy of Mrs. Howard H. Kelly, Frederick, Maryland.

Maryland Convention resolved that the province be put in the best "state of defense."[15] This was in September 1775 and he served continuously as an officer in the militia until the end of the war in May 1783.

On November 29, 1775, the Committee of Observation reviewed the records of 32 militia companies recruited and organized in the Middle District of Frederick County. Dr. Thomas had organized the second company and was elected captain by the membership, which was made up of two lieutenants, one ensign, four sergeants, four corporals, one drum and fifer, and fifty-six privates. Seven companies of militiamen and two of minutemen were combined to make the Fourth Battalion with Thomas elected as commanding officer, with the rank of colonel.

When commissions were issued by the convention later in the year, Philip Thomas was given a captaincy as commander of the Second Company, but he was passed over for a colonel's commission despite the fact that he has been elected by the officers of the Fourth Battalion. He resigned the captain's commission, explaining that he thought his seniority and service merited the rank. Dr. Thomas was careful not to blame the convention for the slight, but ventured that it was due to intrigue amongst several junior officers.[16]

At the next convention in July 1776, he was again commissioned captain of the Second Company.

Politician

After the Committees of Observation and Correspondence were dissolved in October 1776 and Maryland became a state, Philip Thomas was elected as one of four delegates from Frederick County to the First General Assembly in February 1777, under Governor Thomas Johnson, a fellow Fredericktonian. The citizens of Frederick County reelected him to represent them during the Second General Assembly.[17]

Both before and after the Declaration of Independence, he carried out a number of orders given by the Council of the Western Shore. He wrote to the council that there were many sick soldiers left in Frederick by the Continental army and that there were a large number of deserters in the county who were being sheltered by the citizens. The council answered that they were sure that he would continue to treat the sick soldiers with his usual humanity.

During the period of July 1778 to February 1781, he was busy carrying out a number of nonprofessional requests made by the council. He bartered cattle hides for army boots, conducted court martials to try delinquent officers and men, helped find and buy as much flour as possible for the suffering troops in winter quarters, and despite the lack of hard cash, struggled to obtain supplies for guards and prisoners sent to Frederick County.[18]

As a result of serving on the Committee of Grievance and Courts of Justice during the First General Assembly, he was appointed Justice of Peace and Judge of the Orphans Court for Frederick County in November 1778. In addition, he was later issued a commission of oyer and terminer, a directive to hold court and try offenses. This increased his jurisdiction as a judge to try serious criminal cases.

A journal of the court in Frederick shows that on April 13, 1779, he belatedly took an oath to declare his belief in the Christian religion, a strict requirement for judges[19] (**Figure 3**). Although he was reappointed in 1780, on September 19, 1781, he sent a letter to the Honorable John Stone, president of the council, resigning his appointments of justice and judge. He pleaded poor health and "more business, public and private that I can not possibly manage with propriety. I shall always be happy in rendering the public every service in my power and entertain a due sense of the honors conferred on me."[20]

In early February 1781 Dr. Thomas was issued a captain's commission to command a Light Horse Troop of Calvary. The State Assembly had resolved that each county organize such a troop to support the regular army. He had organized and trained a volunteer who had agreed to furnish his own mounts, saddles, and accouterments, and be on call for emergencies. Dr. Thomas was an accomplished equestrian and bred horses on his farm, "Mt. Philip."

Military duty

When Philip Thomas was appointed lieutenant of Frederick County, he headed the entire militia on February 20, 1781. He was also given the rank of supernumerary colonel in the regular army. This promotion enabled him to be on the same or higher level than any of the Continental army officers who were in command of guard units accompanying the large number of enemy prisoners passing through or garrisoned in Western Maryland. One authority commented that he was "virtually a commissioner of prisoners in Frederick County."[21]

After he accepted these new commissions, Thomas was made solely responsible for guarding the convention troops already in the Frederick barracks. The council ordered a company of Matrosses (artillery) to march from Annapolis to help in the assignment. A full company of militia from Prince Georges, Montgomery, Baltimore, and Anne Arundel counties was also sent to Frederick.

In late December 1779, a total of 2,300 British and 1,900 German mercenaries, known as the convention troops taken prisoner at Saratoga, had passed through Frederick County on their

way to Charlottesville, Virginia. General Washington thought that in the remote area of Frederick County, the troops would be safe from rescue by the enemy.

When Cornwallis' army began to move northward through Virginia, in the fall of 1780, these prisoners were moved back into Frederick, Fort Frederick, and Pennsylvania. About 800 British officers and men remained in Frederick. By February their numbers had been reduced to about 450 by exchanges and escapes. The Maryland Assembly requested permission from the congress in Philadelphia to move these troops to York, Pennsylvania.

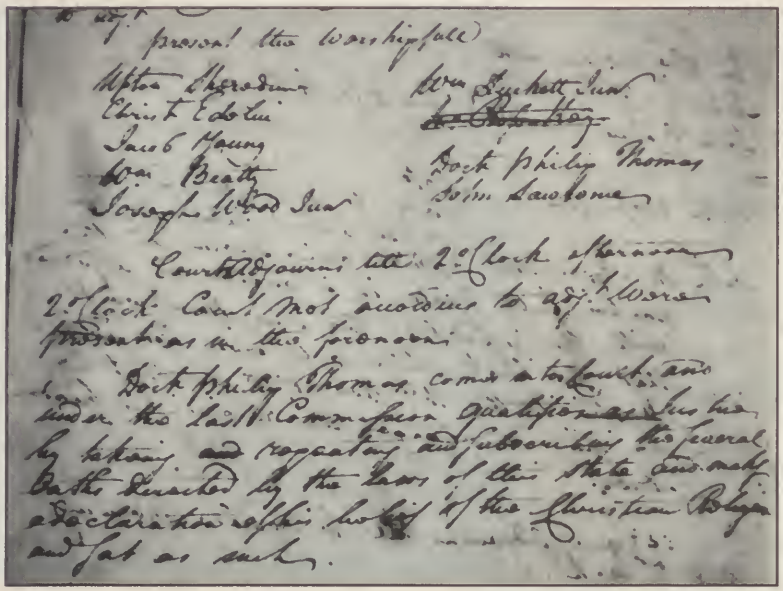


FIGURE 3. A copy of Frederick County court minutes, dated April 13, 1779. Dr. Thomas qualified as justice of peace and took an oath that he believed in the Christian religion. Frederick County Court (Minutes) 1779, P. 18 Philip Thomas, 13 April 1779 [MSA C831-11, Md. HR 6835].
Photograph courtesy of the Maryland State Archives.

In March 1781, Dr. Thomas received instructions to supervise the passage of German prisoners through Maryland on their way from Charlottesville to Lancaster, Pennsylvania. He was to provide transportation, food, shelter and any necessary supplies while the troops were in Maryland.

Another order involved the acceptance of prisoners taken at the Battle of Cowpens in South Carolina. These prisoners, about 300, had proven difficult and were apt to escape. Dr. Thomas was advised to take every precaution to prevent desertions (i.e., escapes).

At the end of a long letter of instructions, the Council of Safety expressed its confidence to him saying: "and rely on your prudence and good management in appointing fit and proper officers and doing everything else that may occur to you to be necessary."[22]

During this period, when a large number of prisoners and guards were being maneuvered in and out of Frederick County, Dr. Thomas had great difficulty obtaining food from the surrounding farmers. They were reluctant to accept Continental currency and the council repeatedly mentioned that it had no specie (i.e., coined money) or hard cash. Discipline was low and some troops roamed the countryside taking whatever they could find. Also, at this time General Gist of the Continental army removed most of his guards so they could join the Southern army.

Before Dr. Thomas was able to carry out his orders, he was informed that the Board of War directed the prisoners to remain in Maryland because Pennsylvania refused to accept them. Colonel Moses Rawlings, the regular army officer in charge and Colonel Thomas were then instructed to send the prisoners to Fort Frederick in Washington County where they would be under the supervision of Colonel James Wood.[23]

The month of June 1781 was especially busy. On June 1 the Council informed Dr. Thomas that Lord Cornwallis was making rapid progress through Virginia and in all probability would invade Maryland. He was directed to have all arms in the county immediately repaired, have 20,000 cartridges made up, and hire as many hands as necessary to send 1,000 weight of lead and six barrels of musket power from the magazine in Frederick. In addition he was to secure at least ten wagons and drivers to transport the ammunition and provisions immediately to Georgetown. If merchants and others refused to accept the Continental paper money, he was authorized to confiscate any material mentioned in his orders.[23] Five hundred militiamen and officers were to march to Georgetown where they would meet with troops from Baltimore and Kent County.

After all of these frantic preparations had been made, on June 14 the Council sent circulars to all counties involved informing them that the intelligence information about an enemy force approaching the Potomac river was false. The large militia force was dismissed and all supplies disbursed.

On June 17, Dr. Thomas' wife, Jane Contee, died after a brief illness. Despite this sudden tragedy in his life, Dr. Thomas continued to serve in his capacity as lieutenant of Frederick County. On June 21, probably due to poor and slow communications, he received another special commission of oyer and terminer and gaol delivery.[24]

After the Battle of Yorktown, where a total of 6,259 prisoners were taken, about 1,600 German mercenaries started to march to Winchester, Virginia on October 21, 1781, two days after their

surrender. They arrived at their destination on November 8 and remained there for four months.

On September 1, the council apologized for giving Dr. Thomas so much to do: "we would not give you the present trouble, but we know no person on whom we can so much depend on an emergency so pressing."[25]

In a letter dated November 10, the council wrote Colonel Thomas asking for his judgment as to how to take care of the British prisoners. It was impossible for the members of the council to give him any particular directions and referred "the whole management of this business to you." He was to contact Colonel Moses Rawlings to arrange to receive as many prisoners as possible at Fort Frederick. In addition, Dr. Thomas was authorized to impress and seize all articles necessary to repair the two L-shaped stone barracks and other houses for the immediate shelter of the troops.[26]



FIGURE 4. The Hessian Barracks is one of two original, L-shaped stone buildings, and is preserved as a museum.

When the British troops arrived from Yorktown the prisoners were put to work repairing buildings. There were experienced joiners (i.e., carpenters) amongst the troops and they were able to quickly put the unfinished barracks in order. Philip Thomas had previously suggested that a stockade fort be erected near the Catoctin Mountains and the plan was laid before the General Assembly, but nothing was done. Provisions for the prisoners were ordered from several counties to be forwarded to Frederick. A portion of these supplies were to be shared with Colonel Rawlings at Fort Frederick.

After three months, the German prisoners in Winchester, Virginia, received orders to break camp and proceed to barracks in Frederick. Four German regiments arrived in Frederick on January 20, 1782, having crossed the Potomac River on ice in the midst of severe winter weather. One soldier wrote in his memoirs, "the barracks were two beautiful casern [a building for soldiers] of L-shaped wings".

For the remainder of the war these prisoners, now known as Hessians, were confined in Frederick and Colonel Thomas worked closely with Major Bayley, the regular army officer-in-charge. On one occasion, Bayley complained to the council that Dr. Thomas was, "too tender of heart" with his militia guards and that, "several of his officers should have been broken."[20]

Early in 1783, when the war was almost over, Dr. Thomas received a request that he attend a group of wounded soldiers left in Frederick after the regular troops had departed. The council in Annapolis was sure he would take care of any sick soldiers of the Continental army and continue his "humanitarian efforts." Previously, he had requested authority to build a hospital, but the legislature suggested that he apply to the Minister of War in Philadelphia for money.

During the 18-month captivity of the Yorktown prisoners in Frederick, over 850 Hessians and Ansbackers had deserted. Most of these remained in Frederick County, married local girls, and became productive citizens of the new nation.[28]

News of the signing of the Treaty of Paris on January 20, 1783, was brought to America by the French cutter, *Triumph*. The greetings reached Frederick on March 27 and there was a large parade with fireworks made by the Hessians and many of the citizens carried white banners with 13 stripes for the 13 states.[29]

By May 13, 1783, all of the prisoners had left and today one of the preserved L-shaped stone barracks is a museum known as the "Hessian Barracks" (**Figure 4**).

After the war, Philip Thomas continued to pursue his political ambitions and became a leader of the Federalist party in Western Maryland. In 1789, during the first federal election he was picked to be one of eight presidential electors from Maryland. He was elected on an at large ticket by the state voters and not by district. His vote was cast in Annapolis on February 4 for George Washington and Robert Hanson Harrison, chief justice of Maryland and a favorite son.[30]

President of the Faculty

When the first organizational meeting of the Medical and Chirurgical Faculty of Maryland was held in Annapolis in June 1799, Philip Thomas was one of 101 founding fathers. Cordell described him as "the revered Philip Thomas of Frederick, a leader in his community."[1] Upton Scott of Annapolis, age 77, was elected president and Philip Thomas was chosen as a mem-

ber of the board of examiners for the Western Shore. Ashton Alexander of Baltimore, one of Dr Thomas' apprentices and his son-in-law, was elected secretary and later treasurer. Alexander was a younger member at 27 and eventually became the last survivor of the founding fathers.

At the biennial meeting in 1801, Dr. Scott declined a second term, pleading poor health. Dr. Thomas was unanimously elected as his successor, and because the meeting was poorly attended, it was decided that the next assembly would be in Baltimore.

A special meeting was called in 1802 and Dr. Thomas opened the session with a long address, later published in the *Baltimore Federal Gazette* on June 16. He strongly recommended that a plan for a medical college be adopted. A committee that included Dr. John B. Davidge was appointed to pursue further action on the proposal. Censors were appointed for each county and the principle towns of Baltimore, Annapolis, Frederick, and Hagerstown. A large executive committee also was chosen.

In 1807 the Medical College of Maryland was chartered, and since it had been sponsored by the Faculty, Dr. Thomas, as president, was appointed its chancellor.[32] He held this post until 1813 when the school's charter was changed by the state legislature and his supervisory position was abolished.

Biennial meetings were held in Baltimore and at the 1811 assembly, Dr. Thomas was elected president for the last time. He died on April 25, 1815, while caring for his patients during an epidemic that was prevalent at that time in Western Maryland.

Both Dr. Thomas and his son, John Hanson Thomas, were buried in the new Episcopal Burying Grounds in Frederick and later moved to Mt. Olivet cemetery.

John Hanson Thomas, his only son, was a prominent lawyer and orator who was respected throughout the state. He died of the same disease one week later after nursing his father with great affection and exposing himself to a highly contagious condition thought to be typhus.

Philip Thomas' tombstone is inscribed: "A Father and friend to the sick; his humanity knew not the distinction between rich or poor. For more than forty-five years he was laborious and zealous in his profession."[3]

Acknowledgments

I am indebted to the Maryland Historical Society for access to the portrait of Dr. Thomas and the Archives of Maryland. Dr. Papenfuse and Mr. Richardson were helpful in obtaining material from the Maryland Archives in Annapolis. I am grateful to Dr. Latkowski of the history department of Hood College for his discerning suggestions and criticisms. Mrs. Howard Kelly of Frederick allowed me to examine and copy material about Dr. Thomas' residence. Judy Paternoster, secretary of the Frederick County Medical Society, helped with the manuscript. Cathy Wahl contributed her secretarial and computer skills.

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Nathan Smith's gift to Maryland

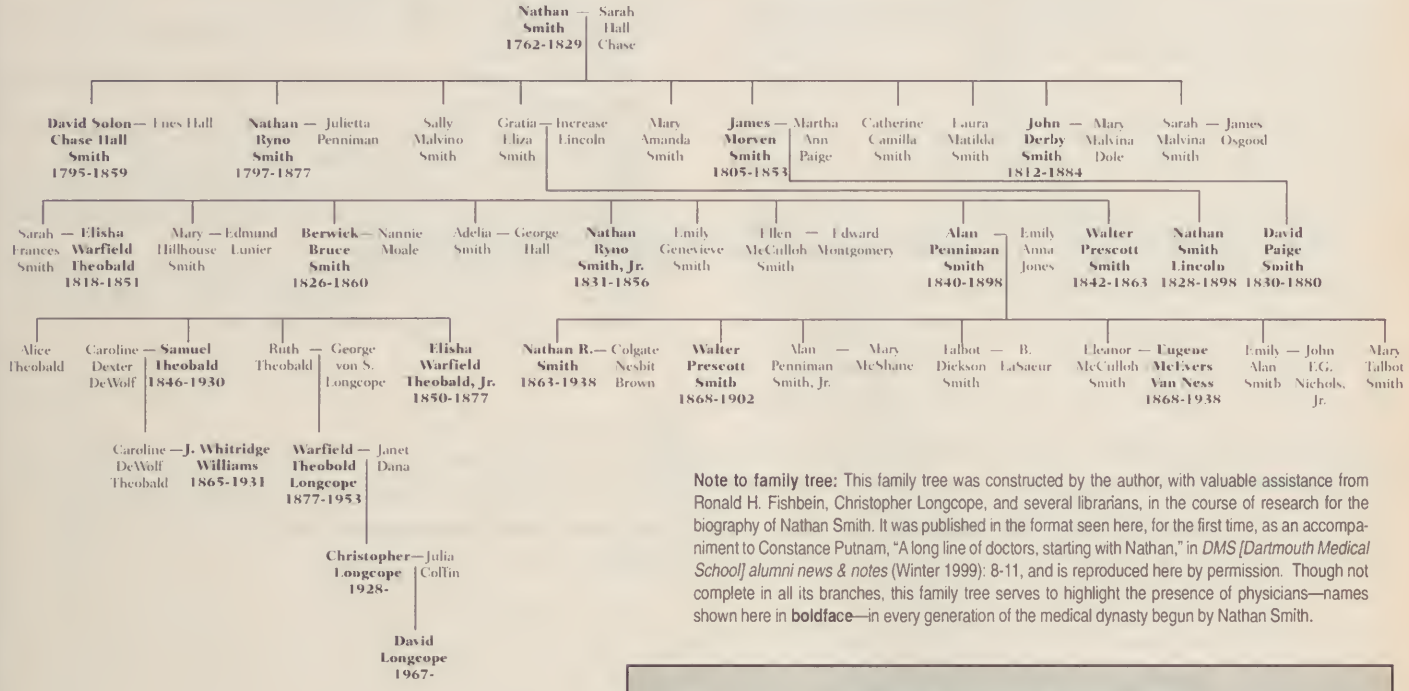
Medical history buffs in New England sometimes talk as if they alone have a claim on Nathan Smith. It was there that—in 1797—he famously and single-handedly founded Dartmouth Medical School. This inveterate medical educator then went on to establish medical schools at three other New England institutions — Yale, the University of Vermont, and Bowdoin — thus helping make Gordon A. Donaldson's description of Smith from more than twenty years ago—"The First All–New England Surgeon"—felicitously appropriate.[1] However, from the key attached to the accompanying Nathan Smith family tree, it is apparent that Maryland has a claim on the Smith legacy as well.

Interestingly enough, despite the importance of the Smith name in New England medical history, Nathan himself was the only member of his family to receive a medical degree at Dartmouth (and that was *honoris causa*). Moreover, no Smith or Smith descendant appears even to have attended Bowdoin; only three of the twenty descendants on the list earned Yale degrees; and it took until the current (seventh) generation, in 1993, for the University of Vermont to bestow a medical degree on someone in the long line of Smith doctors (David Longcope).

But Maryland! Over a period of 45 years, from 1846 to 1891, no fewer than twelve members of the Smith family (direct descendants and in-laws)—more than half of the physicians in the Smith lineage to date—earned M.D. degrees from the University of Maryland. And these degrees are not the only connection with Maryland, as anyone familiar with the history of Maryland medicine knows.[2-4] The most sustained of the Smith connections in Maryland was that of Nathan's second son, Nathan Ryno Smith (known as "Ryno" to distinguish him from his father), despite his having earned his M.D. at Yale. Longtime professor of surgery at Maryland, Ryno was for decades (he died at 80) a dominating force there, a fact hinted at by the epithet generally applied to him: "The Emperor." Without the work of Ryno's son, Alan Penniman Smith (who did earn an M.D. at Maryland), the history of Johns Hopkins and the Johns Hopkins Hospital (and thus of medicine in Maryland) also might well have been very different.

There are, however, still other stories to be told. Though the dozen Smith doctors with Maryland degrees were a varied lot, the family seems to have carried something like a gene for surgical expertise in the family; many of these men—starting with Nathan—became renowned surgeons. Indeed, the gene for medicine itself seems to have been especially strong in what might be called the first Maryland generation. All four of Ryno's sons became physicians (just as all four of Nathan's had).

In contrast to his father, however, Alan Penniman Smith lived to be only 58. His three brothers died even younger: Berwick Bruce Smith (who taught anatomy at Maryland) at 34; Nathan Ryno Smith, Jr., at 25; and Walter Prescott Smith—the youngest in the family of nine children—at 21. Walter, incidentally, died of typhoid fever, contracted while he was serving with the Confederate Army during the Civil War. Two of Walter's cousins also served in the Civil War—on the Union



Note to family tree: This family tree was constructed by the author, with valuable assistance from Ronald H. Fishbein, Christopher Longcope, and several librarians, in the course of research for the biography of Nathan Smith. It was published in the format seen here, for the first time, as an accompaniment to Constance Putnam, "A long line of doctors, starting with Nathan," in *DMS [Dartmouth Medical School] alumni news & notes* (Winter 1999): 8-11, and is reproduced here by permission. Though not complete in all its branches, this family tree serves to highlight the presence of physicians—names shown here in **boldface**—in every generation of the medical dynasty begun by Nathan Smith.

FIGURE 1. The Nathan Smith medical family tree

side. Nathan Smith Lincoln, son of Ryno's sister Gratia, was one; the other was David Paige Smith (the lone Jefferson M.D. in the family), son of Ryno's brother James.

Three of the doctors listed in the genealogy are not strictly Smiths, having married into the family. But in addition to playing a role in extending this unusual line of doctors, they contributed significantly to the Maryland part of the story. One of Alan Penniman Smith's daughters—Eleanor McCulloh Smith—married Eugene McEvers Van Ness, who earned his M.D. at Maryland.

What really wove the line inextricably into the fabric of Maryland medical history, however, was the marriage of Alan's sister Sarah Frances Smith to Elisha Warfield Theobald. Theobald studied at Transylvania, in Kentucky, rather than at Maryland (and whether he ever actually received his M.D. remains unclear). But the Theobald's two sons, Elisha Warfield Theobald, Jr., and Samuel Theobald, each earned an M.D. degree from Maryland. The latter's outstanding career (he was Johns Hopkins' first professor of ophthalmology) has been recounted by

The physicians in the Smith lineage

1.	Nathan Smith	M.B./M.D., Harvard, 1790/1811
		M.D. (honoris causa), Dartmouth, 1801
2.	David Solon Chase Hall Smith	M.D., Yale, 1816
3.	Nathan Ryno Smith	M.D., Yale, 1820
4.	James Morven Smith	M.D., Yale, 1828
5.	John Derby Smith	M.D., University of Maryland, 1846
6.	Elisha Warfield Theobald	[?], Transylvania, 1839
7.	Berwick Bruce Smith	M.D., University of Maryland, 1849
8.	Nathan Ryno Smith, Jr.	M.D., University of Maryland, 1855
9.	Alan Penniman Smith	M.D., University of Maryland, 1861
10.	Walter Prescott Smith	M.D., University of Maryland, 1863
11.	Nathan Smith Lincoln	M.D., University of Maryland, 1852
12.	David Paige Smith	M.D., Jefferson, 1853
13.	Samuel Theobald	M.D., University of Maryland, 1867
14.	Elisha Warfield Theobald, Jr.	M.D., University of Maryland, 1875
15.	Nathan R. Smith	M.D., University of Maryland, 1886
16.	Walter Prescott Smith	M.D., University of Maryland, 1890
17.	Eugene McEvers Van Ness	M.D., University of Maryland, 1891
18.	J. Whitridge Willaims	M.D., University of Maryland, 1888
19.	Warfield Theobald Longcope	M.D., Johns Hopkins, 1901
20.	Christopher Longcope	M.D., Johns Hopkins, 1953
21.	David Longcope	M.D., University of Vermont, 1993

Robert B. Welch.[5] (Interestingly, Welch was a medical-school classmate, at Johns Hopkins, of Samuel Theobald's great-nephew Christopher Longcope—the sole physician representative of the sixth generation of Smith doctors.) Furthermore, Samuel Theobald's son-in-law, J. Whitridge "Bull" Williams—another Maryland M.D.—was the first professor of obstetrics at Johns Hopkins.

A family tree shows only branches; it does not detail the stories of those whose names appear on it. Much more remains to be learned and told about the lives and careers of the 21 Smith family doctors named here. But even a quick perusal of the partial family tree that accompanies this sketch shows what an important gift Nathan Smith, through his descendants, made to Maryland medicine.

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Brief history of the *Maryland Medical Journal*

In April 1881, T.A. Ashby, M.D., Editor, *Maryland State Medical Journal*, reported:

In October 1839, the Maryland Medical and Surgical Journal was established under the auspices of the Medical and Chirurgical Faculty of Maryland, and as an official organ of the Medical Department of the United States Army and Navy. It was published regularly until March of 1843.

From 1843 to 1860 there were no medical journals published in Maryland.

In May of 1877, *Maryland Medical Journal* published its first issue, edited by H.E.T. Manning, M.D., and T.A. Ashby, M.D.

In 1880, the journal became semi-monthly publishing on the 1st and 15th of each month.

As of his report, Dr. Ashby reported that the journal had reached Volume VII, No. 12: "It has lived longer than any Journal published in the state of Maryland."

The journal did cease publishing in 1918.

In December of 1951 it was announced that a new publication would replace the Bulletin: "It is believed a journal will more effectively serve the membership than either the Bulletin or the News Letter." The journal began in January 1952.

Source: Transactions of the Medical and Chirurgical Faculty of the State of Maryland

Remembering Dr. John C. Krantz, Jr.

This year marks the hundredth anniversary of the birth of Dr. John C. Krantz, Jr. Many readers of the *Maryland Medical Journal* will remember being one of his more than 3,000 students of pharmacology at the University of Maryland School of Medicine. These former students will recall that he was a kind, compassionate, soft-spoken, silver-tongued, and dedicated teacher and researcher.

Dr. Krantz, the son of a practicing pharmacist, was born in Baltimore on October 8, 1899 (C. Ebeling, personal communication). Both his home and the pharmacy, where he early learned salient points concerning therapy for many of the ills of man, were located only a few blocks from the Johns Hopkins Hospital.

He initially followed in his father's footsteps and entered the School of Pharmacy at the University of Maryland. World War I was in progress and he and his fellow students became part of a student army training corp on the Baltimore campus. His unit was scheduled to be sent to France in March 1919, but because of the war's end he was discharged from the service in December 1918.[1] He graduated from the then two-year course in 1919 with a Graduate in Pharmacy degree.

The dean recognized Dr. Krantz's potential and asked him to remain for a new advanced course, which would lead to a Pharmaceutical Chemist degree. He remained, ultimately receiving his B.S., M.S., and in 1928, his Ph.D.

In 1921, Dr. Krantz became a teacher at his alma matter and was paid $1,150 per year. About this time, he was also offered employment at a salary of $2,500 per year at Hynson, Westcott & Dunning, a local pharmaceutical manufacturing company. Despite the higher salary offer and the fact that his duties at the university were multiple and overwhelming, his passion for teaching was so strong that he elected to remain at the school.

After Dr. Krantz taught for about five years in both the pharmacy and dental schools, and assisted the dean as a lecturer in pharmacy at the Johns Hopkins School of Medicine, the dean of the pharmacy school left to assume a more prestigious position in the profession. The executive committee at the Pharmacy School unanimously recommended that Dr. Krantz be appointed as the new dean. However, they were overruled and the person who was the first to ever receive a Ph.D. in Pharmacy was selected for the position. Simultaneously, Dr. Krantz was promoted to the status of full professor of pharmacy.

Unfortunately, the new dean made it apparent to Dr. Krantz that he did not wish him to remain on his staff. The president of Sharp and Dohme, another pharmaceutical company located in Baltimore, offered him a position for which he would receive $5,000 per year and a royalty on any

product that he developed and they marketed. Dr. Krantz left for this new endeavor as director of research for this company. He worked on the production of a salt substitute for patients with heart failure, ST37 (an antiseptic), Sucrets, and other medicines.

In 1930, it was rumored that Sharp and Dohme was considering uniting with another pharmaceutical house and moving to Philadelphia. Dr. Krantz did not wish to leave Baltimore. Thus, when he learned of a position vacancy at the state health department, he sought the opening and was awarded the post of chief of their Bureau of Chemistry.

However, in 1935 he was able to return to his real loves – teaching and research – when he was appointed professor and head of the department of pharmacology at the University of Maryland School of Medicine. He maintained that position for 30 years and engaged in research that produced a number of anesthetics as well as drugs to combat cardiovascular and mental diseases. His affection for his home state resulted in his placing "mar" at the end of names given to several of his anesthetics to identify them with Maryland.[2]

The stature of this quiet giant was recognized nationally by his election to lead a number of scientific organizations and his appointment to the review committee of the *U.S. Pharmacopoeia.* This volume is the bible of the field of pharmacy and is revised every ten years. He was on this committee for 31 years and was its secretary for both the 1940 and 1950 revisions.

Dr. Krantz received numerous awards and honorary degrees. His fame as both a scientist and a speaker brought him innumerable speaking engagements. He was a prolific writer of both scientific and lay subjects. In 1949, he coauthored a volume, *Pharmacologic Principles of Medical Practice*, which went through seven editions, was translated into Spanish and Portuguese, and was a major text in most of the medical schools in this country. His coauthor was Dr. C. Jelleff Carr, a young man who followed him through a number of his positions and then was a member of his staff at the medical school.

Among his other publications of book length was one coauthored with the then Governor of Maryland, Theodore McKeldin, another who was known for his gift of speech. The title of this book was *The Art of Eloquence*. His regular publication of scientific articles did not interfere with his oral presentations and other writings, including a novel.

Dr. Krantz's served on numerous public and church committees, but his civic conscience did not stop there. He appeared before a committee of the Maryland Senate in 1950 to warn of the dangers of smog to the citizens of Baltimore.[3] This was at a time when few, if any others, gave this problem any consideration. Yet, he warned then of the toll the smog would produce if left unchecked.

From an early age Dr. Krantz was an avid boatsman, owned a number of vessels, and sailed whenever he could. His passion for this sport infected his wife, daughter, and son-in-law, all of whom sailed with him on many of his voyages. Later in his life he purchased a home on Gibson Island from which he could sail at will.

An avid swimmer, for 45 years, he usually could be found at lunchtime swimming the length of the pool at the YMCA. It is estimated that during those years he swam the air distance from the east to the west coast of the lower 48 states.

He also enjoyed other sports including ice skating. The author remembers being a student in his class when he lectured in a wheel chair after fracturing his leg on the ice.

Historian that he was, Dr. Krantz wrote extensively on the life of Robert E. Lee and how his illnesses contributed to the South's loss of the Civil War.[3-5] His desire to record events for posterity undoubtedly contributed to the writing of his autobiography, *Recollections, A Medical Scientist Remembers,* and possibly caused him to become interested in carving models of the various boats he owned.[6]

After Dr. Krantz's retirement he produced three motion pictures. The first was based on his early novel about a young physician and his research in the cure of diabetes. The second was the struggle of Robert E. Lee and his illnesses during the Civil War. The final film was the story of William Withering's discovery and use of digitalis (C. Ebeling, personal communication).

In 1983, after three years of chronic illness, this person who was blessed with so many talents and who left the world so enriched, quietly passed to his reward. At the time of his death he had been happily married for 62 years. His wife succumbed some ten years later. He is survived by his only child, Claire, who resides in Baltimore and is married to one of his former students, William Carl Ebeling III, M.D. (C. Ebeling, personal communication).

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The inspiration for this article came from an exhibit on "The Life and Works of Dr. John C. Krantz, Jr." The exhibit was honored with the First Place — Best Observance by County Auxiliary with 75-150 members, as well as The Dr. and Mrs. Milford O. Rouse Award, by the Southern Medical Association Auxiliary in 1998. The *Maryland Medical Journal* would like to recognize the Alliance and the work of Ms. Joyce Bahraini, Immediate Past President, Alliance to Montgomery County Medical Society.

Was William Osler responsible for Gertrude Stein's failure to graduate from the Johns Hopkins University School of Medicine?

William Osler, M.D., the father of American medicine, had a distinguished career in America before becoming Regius Professor of Medicine at Oxford, England. His views on medical education and his personality and character have been extensively written about.[1-5]

Few remember that Gertrude Stein, an American author who became a celebrity and legend in Paris, was a Johns Hopkins medical school student between 1897 and 1901. Some[6] believe that it was Dr. Osler who was primarily responsible for removing Gertrude Stein from medical school in her last semester for reasons that ranged from his alleged sexism, anti-feminism, homophobia and/or anti-lesbianism, to her reported refusal to take final examinations. This paper attempts an objective review of the reasons Gertrude Stein failed to graduate from the Johns Hopkins University School of Medicine and examines the alleged part played by William Osler.

William Osler, as remembered by Lillian Welsh, jested to the Johns Hopkins house officers that there were three sexes: "Men, women and women physicians."[6,7] And, Dorothy Reed, a graduate of the Johns Hopkins Class of 1901, alleged that Dr. Osler did not like the idea of women in medicine.[8]

It is quite possible that Dr. Osler knew Gertrude Stein. She took medical clinic courses with him at the Johns Hopkins Dispensary (outpatient clinic). Dr. Osler regularly attended the teaching clinics at noon on Tuesdays, Thursdays, and Saturdays, along with all third-year students.[9] He most certainly had to notice her, as she was one of only seven female students in that year.

Biographical overview

Stein was born February 3, 1874, in Allegheny, Pennsylvania to German-Jewish parents. She spent her infancy in Vienna, her childhood in Paris, and her girlhood in Oakland, California. Her mother and strong-willed father, in his peripatetic business dealings, carried her around the world. Her father has been described as irascible, unpredictable, and tyrannical by various biographers. It is also alleged that he was unfaithful while Stein's mother was dying from cancer and that he was sexually aggressive to at least one of his daughters after his wife's death.[10] After her parents died, Stein returned to her family home in Baltimore, Maryland, to live with her remaining aunts and uncles.

Stein's academic career was promising while a student at the Harvard Annex, which later became Radcliffe College. She energetically and enthusiastically studied philosophy under George Santayna, and psychology under William James. James was a famous psychologist, teacher, and lecturer. At the age of 48, he had published his monumental, two-volume, *Principles of Psychology.*[11] Stein expressed an interest in psychology and the study of the subconscious mind. In a burst of academic energy she carried out innovative and original experimental studies, some published under James' direction.

It was James who, impressed with Stein, first suggested that she get a medical education so she could adequately prepare for a career in psychological studies. In her junior and senior years at Radcliffe, Stein passed the difficult but necessary premedical courses, except for Latin, which she passed after graduation from Radcliffe. Her grades were very good, with an A/C in Psychology (C because Stein chose not to take the final exam in the second semester, and other students objected to James at first giving her an A). She attained the equivalent of an A in philosophy, forensics, and history; a B in zoology; a B/C in math; a C in physics; a B+ in German literature; and a B in botany.[12] She completed her courses with great ease. She was even more interested in social events than academics.

Stein developed a reputation for being a "terrific talker, but an elegant listener too." She was a consistent theatergoer and bicyclist.[10] Ever the feminist Stein loved to ride the bicycle. Perhaps even at that early time she was making a political statement. An unprecedented change had taken place with the coming of the bicycle, as pointed out by one historian,[13] which destroyed the myth of feminine fragility, as a daringly split skirt was required to ride it.

In 1900, while a student at the Johns Hopkins University School of Medicine, Stein met May Bookstaver, with whom she had an affair, described in her book, *Q.E.D. (quod erat demonstrandum).*[14,15] Her experience suggested that lesbian relationships were not unusual at Hopkins or at other universities.

Gertrude Stein, later in her life was described as an eccentric genius and a phenomenon of the early 20th century. She easily, as Mellow[14] states, could have claimed the distinction of creating the first museum of modern art in her own apartment in Paris. There, she showed the original works of her friends, Picasso, Renoir, Matisse, Gauguin, and anybody that was anybody of note in the art world. Stein became a legend in Paris. She was always at the center of a network of journalists, publicists, collectors, artists, and musicians. In the world of art and literature, especially in the France of the early 1900s, she spread the gospel of modernism. She wrote of her close friendship with Picasso, whose painting of her is exhibited in New York's Metropolitan Museum of Art. She wrote also of Matisse, and all the other bohemians, their wives, and their many mistresses.

Stein knew the greats and near greats in art, music, poetry and literature. She supported Picasso, Gris, Matisse, Hemmingway, Sherwood Anderson, and F. Scott Fitzgerald to name only a few. She popularized them first to the intellectual world and then to the general public. Stein's Paris apartment at 27 Rue de Fleures was an international meeting ground for transcontinental gossip with an ever-present contingent of famous Americans. Even visits from English Royalty were not unusual.[14] Her literary and artistic judgments were revered. Her chance remarks could make or destroy reputations. During the 1930s, at the peak of her popularity, she was invited to the White House during a triumphant speaking tour of the United States.

It has been said of her that her own writing represented an explosion of words in what her abstract artist friends like Matisse and Picasso were doing in other media. She was highly quotable with: "A rose is a rose is a rose," "What is the answer? [In which I was silent] In that case what is the question?" and, referring to California, "There is no there there". She gave name to the post World War I expatriates in Paris as the "Lost Generation" to her friend Ernest Hemmingway, who later popularized the term in his writing.

Her first published book, *Three Lives* (1909), told the stories of three working class women she modeled from her medical student days delivering babies in the poorest sections of Baltimore. It has been called a minor masterpiece. *The Making of Americans,* written in 1906 to 1908 but not published until 1925, was too convoluted and obscure for general readers. Her only book to reach a wide public was the *Autobiography of Alice B. Toklas,* which in reality was her own autobiography.

Stein lived the last 38 years of her life in a monogamous relationship with her companion, Alice B. Toklas (1877-1967), who was described as her lover, editor, secretary, housekeeper, and cook. Stein died in Paris on July 27, 1946. Although both Toklas and Stein were Jewish, funeral ceremonies were held for her according to the wishes of Toklas, who converted to Catholicism soon after Stein's death.

She was buried "as a national treasure of France" on Pere Lachaise Cemetery, the resting-place of many of the highly respected and great French dead. She had chosen to remain in France during World War II at great personal risk. There, the Mayor and the citizens of the small town of Culoz protected her from the occupying Germans. Early in life, Stein, as so many

others at that time, "stayed in the closet" and hid her lesbian tendencies. She even obfuscated these characteristics in her autobiographical novels.

Stein's influence is felt even now. In June 1999, a new play about Stein opened in New York; in April 1999, the Library of America published two large volumes of her writings; and in February 1999, Washington University in St. Louis held a scholarly conference on her influence on avante garde fiction, poetry, and film.

Medical school

It says something about Stein that she did not apply to the Women's Medical College of Baltimore, where her friend Clarabel Cone[16] received a degree in 1890. Instead, she applied to the Johns Hopkins University School of Medicine, which had opened its doors to women students "on the same terms of men."[17] A small group of highly organized women, led by M. Carey Thomas, Mary Elizabeth Garrett, Mary Gwinn, and Elizabeth King, had shamelessly blackmailed the trustees of the budding Johns Hopkins University into accepting women into their medical school, against the will of most of the medical faculty, with a much needed $500,000 gift. Without this gift the Johns Hopkins University School of Medicine could not open.[18]

At the turn of the 20th century it took women with great emotional and physical stamina to survive medical school training. Education was thought to be unhealthy for young women because its cerebral challenge strained their abilities and even wore them out physically.[13]

Even at the new Johns Hopkins University School of Medicine, despite of, or because of, the efforts of those who opened the doors for women medical students, women were regarded as an impediment. They were thought of as a form of coolie (i.e., unskilled) labor in a male domain. The women knew they were the objects of contempt.[18] They were subjected to practical jokes and crude stories as a form of relentless hazing. They were hit "by missiles of paper, tinfoil, and tobacco quids."[19,20]

Males were openly antagonistic to women medical students "because they took up desirable internship positions meant for them."[18] Although by 1890 there were 4,500 women physicians in the United States, almost all trained in all women medical schools, the American Medical Association did not accept women members until 1915. Additionally, women doctors were thought of by the public as unfeminine, unmarriageable, strange, deviant, and unnatural.[21] "To be addressed in public as a doctor," physician Marie Zakrewska told pediatrician Mary Putnam Jacobi, "was painful for all heads would turn to the woman thus stigmatized."[18]

Stein's Hopkins career began auspiciously. She arrived at Johns Hopkins as a freshman in the fall of 1897 with a reputation for being one of James' most brilliant students. Her original and imaginative studies on the subconscious, summarizing her experiments under James, were published in the *Harvard Psychological Review*. These papers included her early innovative attempts, in the years before Freud, to describe the layers of the subconscious mind.[22,23]

However, four years later, late in the afternoon of June 5, 1901, in the last month of the last quarter of her last year, a faculty committee consisting of "the big men" — Drs. Abel, Halsted, Howell, Mall, Osler, Welch and Williams — had convened in the dean's office. An excerpt from the minutes of the Johns Hopkins University School of Medicine's medical faculty advisory board for June 5, found in The Alan Mason Chesney Medical Archives of the Johns Hopkins Medical Institutions, states, "The Dean presented the marks of the graduating class, and on motion of Dr. Osler, it was voted that Miss Gertrude Stein be not recommended for the degree of Doctor of Medicine."

No discussion preceding or subsequent to this vote is printed. It is not known who initiated the ouster or for what reasons. When the graduating class photograph was printed six weeks later, Dr. Osler was sitting in the only armchair at front center of the class. There was a number attached to each student for identification. Gertrude Stein, who was standing with the other six women in the far back, received no identifying number. The key for the photograph bears the note, "Shown in the picture but did not graduate — G. Stein."[24]

There were 54 members of the class of 1901 — seven were women. All received their medical degrees, except Gertrude Stein.

Speculations of retaliation — Osler and others

Several allegations have been made, including one that the Johns Hopkins medical school faculty retaliated against a highly verbal and anti-establishment feminist. Stein openly spoke against the Hopkins medical faculty and "the other big men," saying they were anti-women in medicine as well as sexist, and/or homophobic, anti-lesbian, and even anti-Semitic. According to the written comments and memoirs of the other female students in her class, there was some truth to these allegations.[6,8]

Dr. Osler may have known that Stein had taken up as Mellow[14] delicately relates, with a circle of emancipated women, mostly graduates of Smith and Bryn Mawr Colleges. They

met regularly in an apartment shared by her friends, Mabel Haynes and Grace Lounsberry, known to be lesbians, who Osler may have thought of as the "third sex." Stein herself exclaimed at one point in her book, *Q.E.D.*, "I always did thank God I wasn't born a woman."[25]

Dr. Osler's opinion of women was well known and in keeping with the attitudes and mores reflecting the Victorian era and its society.[1,6] Osler once stated that there was "a gradually accumulating surplus of women who will not or cannot fulfill the highest duties for which nature has designed them. I do not know at what age one dare call a woman a spinster. I will put it perhaps rashly at twenty-five. Now, at that critical period, a woman who has not to work for her living, who is without urgent domestic ties, is very apt to become a dangerous element, unless her energies and emotions are diverted in a proper channel."[26]

Furthermore, Dr. Osler is accused "of sitting comfortably in the club chairs of the wood paneled mansions that sheltered Victorian men from women and the lower orders...His ear so sensitive to cultures of the past, was deaf to voices from the street or the slums of his own time...The rise of social thought was an intrusion on him ...and his well formed phrases did not endow Osler into a compassionate crusader or with a social conscience."[6]

At Hopkins, the outspoken Stein openly commented on Baltimore's society of the 1890s. She spoke of the "darkness of existing social conditions," every women's duty to the poor, to the 'fallen woman', and "woman's responsibility to ameliorate the condition of women." She grumbled about sexism, especially in the Johns Hopkins University School of Medicine. "Female colleagues," she noted to her brother Leo, "felt obliged to do extra work, making models of brain tracts just to earn favor with a male professor" (Dr. Franklin Mall, professor and chairman of the department of anatomy). Though she rationalized that she "didn't mind it," she told her brother Leo, "since it was purely mechanical work and rather restful."[27] Yet, she complained that the men in her class did not and would not waste their time on it. She even passed on to her brother the remark of a visiting German anatomist, who after being shown the models of the brain that were produced by the women students, told Mall that it was "an excellent occupation for women and Chinamen."[27]

Dorothy Reed, who would later discover the Reed-Sternberg cell, was a fellow student of Stein, and also an active feminist. Reed, however, did not openly challenge the system. She would empathize privately with Stein about the practical jokes. (A male student had dumped sugar into Stein's test urine and ruined her results.) They complained to each other about the lewd stories directed at the women in the classroom, especially by professors J. W. Williams of obstetrics, and J. N. MacKenzie, of ear, nose and throat. The latter enjoyed comparing the nasal mucosa to the cavernous spongiosum of the penis while smirking at the women students.[8]

Another version of why Stein failed to graduate was that the very influential John Whitridge "Bull" Williams, professor of obstetrics, torpedoed her. He was notorious for his lewd and pornographic stories and Rabelaisian anecdotes, with his eye to the hapless women in his lecture room. He was also in the habit of placing women students conspicuously in the front seats during the dirty joke telling. Stein responded by threatening a boycott of his classes, to which Dr. Williams retorted by threatening that he would blackball her, fail her in his course if she didn't attend, and furthermore, ask her to withdraw from the school. Dr. Williams, about whom anti-Semitism was also alleged,[18] was not to be trifled with. He was referred to as "the Bull" by the students for good reason. He was a large, gruff, thick-necked man, more than six feet tall, whose constantly smoking pipe dangled from his nicotine-stained, large mustache throughout his lectures.[28]

Because she did not take one of James' final exams while at Radcliffe, it was also alleged by some that Stein didn't graduate because she refused to take the medical school exams. But Stein did take all of her exams.[12]

Stein got no support from the faculty. Indeed William Welch, professor of pathology and dean at the Johns Hopkins University School of Medicine, was generally open-minded. But he dreaded the idea of women in medicine. Dr. Welch had earlier argued against receiving women in the medical school because "women in the classrooms would prevent the faculty from talking about those matters too indelicate for a lady to hear."[29]

Stein also received no support from M. Carey Thomas' Women's Board. This may explain Stein's later antipathy towards Thomas and her disciples and "the modern American Woman who confuses her education, her cleverness and intelligence for effective capacity."[30] More disappointing, Stein received no support from fellow students. On the contrary, the male students called her the "Battle-Axe."[18]

Stein's performance — an objective view

Let us attempt an objective look at Gertrude Stein's situation as a medical student. We have researched all of her published biographies, with particular emphasis on her college and

medical school days. It appears that both the students and faculty at Hopkins medical school had an anti-woman attitude. There was also some amount of anti-Semitism and a high degree of sexual harassment in the school.[8] This pushed all of the feminist Gertrude Stein's buttons. Although not practicing her religion, she strongly identified with being Jewish. In addition, she had problems with her own sexual identity, which was perplexing her at that time. This may have laid the groundwork for what was to follow.

Stein's grades at Hopkins during her freshman and sophomore years were excellent. A grade of 1 was the best one could earn, equivalent to an A, while a grade of 5 was failing. Her grades ranged from a 1 in anatomy, 1.5 in histology, 2 in physiology, 2.5 in physiologic chemistry, 1.5 in pathology and bacteriology, and 2 in pharmacology and toxicology. In her third year, she received a 2 in medicine and 2.5 in surgery. But, in the last part of the third-year semester her grades dropped to 3 in the courses taught by her nemesis, Dr. Williams in obstetrics, and the notorious Dr. MacKenzie in laryngoscopy. Also in the third year, two other grades fell to a C level; she received a 3 in neurology and a 3 in clinical microscopy.[12]

Coincident with these falling grades in the latter part of her third year of medical school, Stein became listless and "bored." She developed a serious concern about her health and a preoccupation that something had gone wrong with her body, in particular, her blood.[14] She went as far as to hire a boxer-trainer to come to her home to work out. This she thought would help to reinvigorate her, but with a curious twist of physical aggression. Her downstairs neighbor, a fellow student named Emma Lootz, saw her chandelier shaking and the house echoed with "Now give me one on the jaw!" — "Now give me one in the kidney!"[14]

She developed a marked "disinterest" in her studies and became "bored" with her courses just as her brother Leo had a few years earlier with his studies in Cambridge. He had been bored, unable to concentrate, lethargic, listless, and indecisive, especially about making further career decisions. Because of this he dropped out of the Harvard Law School. He subsequently quit the doctoral program in which he had enrolled in at Johns Hopkins in December 1898, having previously completed the requisite undergraduate science courses with ease.

Stein, with her major interest in the mind, may have been curious to find out the causative, underlying mental factors about both her brother (and herself?) when she asked a friend "about the incidence of melancholy among Jews."[18]

She may have been aware from her Radcliffe student days that the medical establishment and the famous Harvard University Medical School Professor Richard C. Cabot taught that "neuroticism was a prominent finding in the Jewish Race,"[31] leading her to speculate that Abraham Lincoln's deep, despondent moods may have been because he was "part Jewish."[18]

Her brother Leo's protracted slump, his inability to concentrate for long on a single project, his lethargy, and his virtual paralysis of will, may have caused Stein concern. These symptoms were classic of what was then called melancholia and the neurasthenia syndrome, a malady of indeterminate cause and cure.[32] She did not, however, concede the same syndrome in herself, nor did she acknowledge it enough to do anything about it. Or if she did, she, and her friends, explained it away as "boredom." No one on the faculty made this diagnosis on Stein. If anyone noticed an impairment, they kept silent about it. She continued to ascribe all her symptoms and her progressive inertia to boredom, a word she used constantly to explain away, and perhaps to deny, the marked changes in her personality. Her friend Dorothy Reed, who was very close to Stein during her final year of medical school, wondered why "At medicine (during the last year) she (Stein) worked only in a half-hearted way, and her grades were always poor."[14]

Her friends thought she had simply lost interest in medical school studies. Whatever emotions or mood changes Stein had were hidden in a mask of indifference, boredom, and sometimes a show of bravado, especially to several sexist Hopkins faculty, while suffering from inner turmoil and great disappointment.

Indeed, it was during her last year at Hopkins that the "boredom" progressed to the point where, either she would not or could not do any of her homework. When asked even the simplest questions in class, she responded, if at all, by saying that she did not know the answer. In appearance she looked so bored she could not remember the things that "the dullest medical student could not forget." When Marian Walker, an ardent feminist, pleaded, "Gertrude, Gertrude, remember the cause of women," Stein shot back, "You don't know what it is to be bored."[18]

She failed four of the seven final examinations in her senior year. Noteworthy is the failure in the course in obstetrics taught by Dr. Williams, in which she received a 4, and the course in laryngology and rhinology taught by MacKenzie, in which she got a 5. She also failed with a 4 in ophthalmology and otology and a 4 in dermatology.[12]

We do not know whether any special relationship existed between those professors who failed Stein. Nor do we know whether the exams were objective and devoid of subjective predisposition, or oral examinations, which would have been more

subject to bias. From Stein's account, it appears to be the latter.

There should be no doubt that Stein took all the tests. But, she failed to pass all of the subjects necessary to pass, and therefore, she could not graduate.

Some faculty members apparently offered to help Stein with additional elective projects upon which they were working, and by which they could again integrate her drawings into their publications. This assistance to help Stein graduate was proposed as if Stein's problem in not graduating could be corrected by extra work.

Stein was described by classmate W.T. Longcope, a relative of Dr. Williams, as being "fat and awkward, with frowzy black hair, a waddling gait, and her hands were constantly stained."[18] Her friend, Dorothy Reed, continued to blame Dr. Williams, "an aristocrat and a snob [who] couldn't stand her marked Hebrew looks, her sloppy work and her indolence."[14] This appears buttressed by Dr. Osler and Dr. A. M. Harvey, chief of the Hopkins Medical Service, who wrote that "J. Whitridge Williams, professor of obstetrics, had voted to deny her the medical degree, but Franklin P. Mall wanted to give her another chance."[33]

Dr. Mall gave Stein an additional project that involved the sectioning and reconstruction of an embryo human brain, and promised that if successful, he would urge the faculty to give her another chance. But, by happenstance the thin embryo cord, instead of extending from the brain, was embedded back under the brain. Either Stein thought that was the way Mall wanted her to draw it, or due to lack of concentration or communication she gave it little significance. Stein submitted the completed drawings/model, but Mall could not use it and "simply threw it into a wastebasket."[33]

Another friendly teacher, Dr. L. Barker, who had temporarily moved to Chicago, had previously published Stein's models as an integral part of his work.[34] He would later return to Hopkins as professor of medicine. Although she initially did not reach her previous standard of work "on the nucleus of Darkowitch," he also assigned her an additional project to add to his exhibits for his publications. This was done while Stein was registered as a special student at Johns Hopkins the year after she failed to graduate. Again, this may suggest that she was still making efforts to graduate, but in vain.

On January 30, 1902, Barker approved 63 drawings she had completed. That spring he sent them for publication to the *American Journal of Anatomy*. But, the secretary of that journal, Dr. H. McE. Knower, who had to approve it for publication, was also a faculty member at Johns Hopkins. Even though he had little knowledge of that particular subject, he rejected the work for being too long and "not original," after gathering support of other Hopkins faculty members. When challenged by Barker that "this material was of great value," and correctly, that it was original and never before published, Knower, was forced to search, but could not find any such previously published work or drawings. To this Stein suggested that "it was no accident that the Johns Hopkins faculty had rejected her work."[10]

The drawings were never published, even after Mall got involved and also urged the publication. By that time Stein had left to join her brother in Europe. Thirty years later Stein wrote that after Dr. Williams gave her a failing grade in obstetrics he allegedly offered her summer school as a make up. She allegedly expressed her gratitude to him by this bravado reply, "You have no idea how grateful I am to you. I have much inertia and so little initiative." Her brother Leo, after reading this, denied that she made such a statement to Dr. Williams. "It is all false," he said, "though the incidents are partially true."[27]

The record supports Leo, and shows that Stein, despite her open bravado about being bored with medicine and disinterested in graduation, consistently kept her personal ambition to graduate all through the four years of medical school, even when she registered as a special student after not graduating. Also, as late as the last half of the senior year, Stein had privately made plans to take a postgraduate year after graduation. The records show that she corresponded with Adolph Meyer, chief of neuropathology at the Massachusetts State Hospital, regarding a postdoctoral internship. And, despite her demeanor of not caring, it was as late as December of her senior year that she visited Dr. Meyer in Massachusetts to obtain this postgraduate position. Therefore, she really was still interested in graduation and doing postgraduate work. After failing her senior year, she wrote Dr. Meyer saying she was still interested but "would have to be deferred one year."[18]

Stein, 30 years later wrote (in the third person), "The big men like Halstead (sic), & Osler etc. knowing her reputation for original scientific work made the medical examinations merely a matter of form and passed her. But there were others...they thought that she did not answer because she did not consider the professors worth answering. It was impossible to explain to them that she was so bored she could not remember that which of course the dullest medical student could not forget. One of these professors (Williams?) said that though all of the big men were ready to pass her he intended that she be given a lesson and he refused to give her a pass mark and so she was not able to take her degree.[25]

Summary and Conclusions

Previous speculations as to why Stein failed to graduate included: because she "acted out" in rebellion against some sexist but influential faculty, who in turn "got even" with her; she simply changed her mind about graduating; she chose not to do so as a political statement or because of her sexuality; or she couldn't because of emotional turmoil associated with her affair with May Bookstaver.[10] But, the facts do not support any of these as stand-alone reasons. Another hypothesis, which has not previously been entertained, is that she suffered from a depressive episode that initiated and then exacerbated the precarious position she was in at the school.

Depression is a significant illness that requires short- and long-term treatment and psychiatric monitoring. A physician should make a diagnosis of a major depression only with a careful, skillful, and live interview of the subject. To confirm this serious diagnosis the physician attempts to confirm whether at least 5 of a total of 9 symptoms are present nearly most of every day during at least a two-week period according to published criteria in the American Psychiatric Association's DSM-IV.[35]

These criteria or symptoms consist of depressed mood, markedly diminished interests, appetite and weight changes, sleep pattern disturbances, psychomotor changes, feelings of fatigue and/or inertia, feelings of worthlessness and/or guilt, diminished ability to think or concentrate especially in work or study, and recurrent thoughts of death.[35] Also associated with these symptoms are worries over physical health[35] and of "difficulties in concentrating," and "impaired memory associated with a tendency to deny, discount, or explain away symptoms."[35] Often, there is a family history of depression.

It is impossible to accurately diagnose a major depression in Gertrude Stein without an interview. And doing so, especially 100 years later, is sheer speculation. But it is interesting to speculate that she had a major depressive episode during her last two years as a medical student, which prevented her from graduating. We do this with the proviso that we are establishing a hypothesis, to be supported, or not, by further biographical research.

We do know Stein had a radical mood change starting in the third year of medical school. We also know there was a positive family history for depression. Stein's diminished interests in her work and her decreased ability to think and concentrate on her studies were similar to what her older brother Leo experienced three years earlier, forcing him to drop out of school. Later in life, Leo had a prolonged recurrence of a severely debilitating major depression necessitating prolonged psychiatric therapy in New York between 1914 and 1918.[18]

In her own words, Stein complained of "increased inertia," "decreased initiative," and continuous "boredom." She became concerned about her physical health and complained of impaired memory.

Stein continuously explained away her symptoms as boredom. She discounted her changed mental state with the attitude that she really didn't care about schoolwork, taking exams, or graduating. But she really did care. Stein was very successful in rationalizing away her changes in mentation and "in integrating her character around her limitations."[18]

At present, it is not possible to evaluate the other DSM-IV criteria for Stein. Were these mood changes due to what all her biographers state was simply a change of heart in becoming a doctor? Or, was this in actuality a significant, major depression denied by her, and unrecognized, or unacknowledged, by her fellow students or the medical faculty? This needs further research from contemporaneous records vis-a-vis the additional DSM-IV criteria.[35]

One fact is clear. Stein's symptoms were severe enough for a measurable impairment in her functioning (career) in classroom work over a two-year period.[35,36] If she did indeed have a major depression, how much diagnostic alertness to common psychiatric and mood disorders was present in both medical students and faculty?

But, against the hypothesis that she had a depression, none of her biographers mention depression in print. Nor do they write about or describe any prior or subsequent depressive disorder during Stein's lifetime. This may be significant because about 50% of those with a major depression during an early period in life may have another episode(s) and recurrence(s) later on in life, as did her brother Leo.

To further elucidate this, we interviewed her biographer, Brenda Wineapple, who told us that "None of the biographies of Gertrude Stein state that she ever suffered from a depression during any stage of her life. But in retrospect, this is a 'distinct possibility during this period of Stein's third and fourth student years at the Johns Hopkins Medical School, and may explain her failure to graduate. And if she did have recurrences of depression during later years, I would not be surprised that she would attempt to hide it or deny it. She also denied to herself and others any feelings about her mother's tragic death. She never ever talked about it. Nor would I be surprised about her exceptional ability to conceal her true mental state from everyone. This would have been aided by her living arrangements with a very aggressively protective companion, Alice Toklas, who always 'ran interference' for Gertrude, and could probably con-

ceal her intermittent periods of depression, if they occurred, from everyone else around her (personal communication)."

But, even if it was recognized that Stein was developing a bipolar or unipolar depression while in medical school, what would have been done? Perhaps the course of events would be the same. But perhaps some perceptive and sympathetic faculty member, recognizing a progressive mood or mental impairment in a previously normally functioning student, might have arranged a temporary time out from studies and the pressure of final examinations. Stein knew she was doomed to fail those finals and was terrified; she got sick in the Hopkins Gardens on the way to those exams.[18]

Contrary to the version above, and despite the published minutes of the fateful Board meeting, it was not William Osler who initiated, or was even the deciding factor in the circumstances that ousted Gertrude Stein from the Johns Hopkins University School of Medicine. It is clear from the records, Dr. Osler passed her in medicine and, although he may not have been sympathetic to her lifestyle, he made no direct efforts to oust her. Her failure to graduate was according to medical school rules in which Osler had to accede. Failure to obtain a passing mark in any of the required examinations of the final year, including the (oral?) exam given by Professor Williams, resulted in Stein not graduating. Additionally, Dr. Williams' faculty meeting vote to deny her the medical degree also prevented Stein's graduation.

At the least, this examination of Gertrude Stein documents the quality and climate of medical school life, students, and teaching faculty during the turn of the 20th century, and the first years of the new Johns Hopkins University School of Medicine.

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A brief account of the development of premedical education in the United States

More than ever, there is widespread interest in the education of medical students. Although the emphasis has always been on adequate scientific preparation, attention is now being focused on the humanistic grooming of physicians. Patients place a high premium on the qualities of empathy and compassion. Medical schools are introducing their students to the nuances of proper physician-patient communication and, at the same time, emphasizing the relevance of the humanities and liberal arts education as a foundation for the study of medicine.

One subject, which understandably has not captured the attention of the general public, has been the prefatory education necessary for a student's entry into medical school. This "premedical education" is a critical aspect of the scholastic indoctrination into the precincts of medicine.

Before the first medical school in the United States was established at the University of Pennsylvania in 1765, physicians earned their professional titles by completing an apprenticeship with an established practitioner. Until late in the nineteenth century, not only was it unnecessary for a young person to have any basic scientific education before entering medical school, higher education was not at all obligatory.

The University of Maryland School of Medicine, founded in 1807, became one of the first U.S. medical schools to establish its own hospital for clinical instruction and, soon after, initiate a residency program for the further clinical education of its own senior students. It did not, however, require more than a high school education for admission.

The Johns Hopkins University was established in 1876 for the purpose of providing graduate and undergraduate education. From the outset, Mr. Johns Hopkins intended to develop, in addition to a university, a hospital and a medical school for both the care of indigents and the education of physicians. Those charged with the responsibility of fulfilling Mr. Hopkins' intent were the trustees of the boards of the hospital and the university. Daniel Coit Gilman was appointed the first president of both the university and the hospital. His scientific training, as well as his extensive travels to medical centers in Great Britain, France, and Germany, convinced him of the need to develop the new medical school along pathways entirely unlike the established U.S. schools. Beyond the more common goal of training practical physicians versed in the existing lore of medicine, he envisioned a highly scientific school that was fueled by investigative efforts. This vision was shared by Dr. John Shaw Bilings,[1] a distinguished military veteran of the Civil War, whose opinion was greatly respected by Gilman. Thomas H. Huxley, noted British naturalist, vocal supporter of Darwin's theories, and keynote speaker at the university's inauguration, widened the focus by urging that the

new medical school draw upon applicants whose laboratory and classroom experience had prepared them for the rigorous education they would receive in the new medical school.[2] They both admonished Gilman to insist that the applicants to the future medical school have a baccalaureate degree before matriculation. President Charles Elliot of Harvard had already recounted to the trustees, with whom he had consulted as early as June 1874, the importance of seizing the opportunity to set high standards for admission to the proposed medical school. He had experienced great difficulty when trying to persuade his own faculty to require written examinations to test the fitness of applicants to the Harvard Medical School.

With the issuance of the curricular bulletin of 1877, Johns Hopkins University announced the general structure of the preliminary course of instruction for students anticipating the future study of medicine, which would "...at the same time, develop the intellectual powers, upon a liberal and comprehensive plan."

> Physics, Chemistry, and Biology, with Latin, German, French English, form the principal elements of this course, with opportunities for the study of Psychology, Logic, History, and other branches of knowledge, according to the requirements of the scholar.[3]

By the following year prerequisites were imposed for students seeking acceptance to this Preliminary Medical Course. These included courses in arithmetic, algebra, and three books of Euclid, or an equivalent amount of geometry. A Latin requirement specified the ability to translate passages from the first four books of Caesar, De bello Gallico, and the sixth book of the Aeneid. The preliminary qualifying examination would also be judged on the basis of the proper use of English grammar and orthography (correct spelling).

The preliminary medical course, identified also as the third or chemical-biological group, was clearly delineated in the following manner:[4]

First Year

- Experimental physics (lectures and laboratory work)
- Elementary mechanics
- Chemistry (lectures and laboratory work)
- French and German
- Drawing (freehand)

Second Year

- Chemistry (continued)
- General biology (lectures and laboratory work)
- Elementary course in comparative anatomy and zoology (lectures and dissections)
- Elementary course in physiology and histology (lectures and laboratory work)
- Human osteology and the anatomy of the ligaments and joints

Third Year

- Human anatomy
- Advanced course in physiology and histology
- Elements of embryology
- Psychology
- Logic

It was further noted that the course was "...designed to meet the requirement of students who wish to obtain a sound scientific basis for their professional studies, whatever medical school they may afterward select..."

More than a decade passed before the medical school was operational. During that time President Gilman met with Drs. Ira Remsen, chairman of chemistry, and H. Newell Martin. They agreed to accept only those applicants who could demonstrate having had a general liberal education.[5] Later in 1884, the first appointment to the medical faculty was made: William Henry Welch, professor of pathology. Without an established medical school in which to teach, Dr. Welch directed a great deal of his energies into planning the future curriculum and defining the type of preparation a medical student should have before embarking on such a venture. Dr. Welch, recently of New York City and the Bellevue Hospital, was establishing himself as a leader in the new field of medical microbiology, pioneered by Pasteur and Koch. His experiences in Europe convinced him of the importance of familiarity with laboratory investigation and knowledge of scientific activities being conducted at the major intellectual centers. To understand these activities, a student needed to have a thorough reading ability in French and German, then the principle languages of contemporary scientific literature. Dr. Welch felt that to be facile in the laboratory and to have been introduced to the natural sciences while still an undergraduate was essential for an applicant to medical school.

> The attractions of study and the pursuit of medicine have been greatly increased...Many departments of medicine now possess the interest and the attractions of a natural science. Here will be found problems of absorbing interest, some of which call into requisition powers of acute observation, some demand for their solution ingenuity in the device of new methods and of apparatus, others require a profound knowledge of physics, chemistry, or of mathematics, and others call especially for well developed faculties of logical inference and of wide generalization.[6]

The twentieth century had hardly begun when many U.S. medical schools, especially those that held an association with an established university, began to restrict admission to persons whose scientific preparation was deemed adequate and who could pass qualifying examinations. Many insisted upon familiarity with a modern European language as well as the attainment of a baccalaureate degree. Other medical schools less concerned with scholarship were springing up in great numbers; many were ill equipped, inadequately staffed or administered, and most lacked even minimal standards for admission except for the student's ability to pay. For many entrepreneurs, the education of physicians was a lucrative business.

During the first decade of the century, the Carnegie Foundation for the Advancement of Teaching delegated Abraham Flexner to make a door-to-door investigation of the 155 medical schools then in existence. A thorough appraisal of each, including an individual on-site visit, resulted in an expose of wide-spread fraudulent practices and frequent credentialing of insufficiently trained and educated physicians. The report[7] revealed that, in slightly over a century, the United States and Canada hosted 457 medical schools "...many short lived, and perhaps fifty still-born." The document, originally identified as *Medical Education in the United States and Canada, A Report to the Carneigie Foundation for the Advancement of Teaching, Bulletin Number Four*, when it appeared in 1910, had a monumental effect upon the survival of the numerous marginal institutions. Many independent medical schools chose to integrate under the auspices of an established university to assure their continued viability. Again the subject of requirements for admission were revisited.

Nearly 90 years after the Flexner Report, the *Medical School Admission Requirements*,[8] a yearly publication of the Association of American Medical Colleges, recognized that all of the approximately 125 U.S. schools of medicine have nearly identical admission requirements. With the advent of the Medical College Admissions Test, a further attempt was made to standardize those core subjects and proficiencies thought necessary to successfully prepare for the study of medical sciences.

Once considered indispensable to access current medical literature, a reading knowledge of French and German is no longer mandatory. However, facility with a modern foreign language, though not required for admission to any U.S. medical school, continues to be useful and remains a hallmark of a liberal education. Although most candidates for admission to medical schools tend to major in one of the natural sciences, students are often encouraged to take the opportunity to introduce into their personal curricula a variety of courses in the humanities, social, and behavioral sciences. In addition, courses designed to improve proficiency in writing, verbal comprehension, and communication are often suggested.

The twenty-first century physician will be expected to have highly developed scientific and communicative skills, be able to comprehend the economics of health care administration, and be prepared to engage in questions of bioethics while serving as an advocate for the ill. While the published requirements for applicants have become more abridged, admissions committees have concurrently advocated that candidates for medical school present with broad education preparation. Premedical students must rise to meet the challenge.

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Timeless topics

No class of men needs friction so much as physicians; no class gets less. — William Osler, M.D.

Source: Transactions of the Medical and Chirurgical Faculty of the State of Maryland, 1895, pg. 21.

C·M·E·R·C update

The CMERC Update, now in its fourth year, informs all MedChi accredited CME sponsors about the activities of the Continuing Medical Education Review Committee (CMERC). The CMERC received dback (borh negative and positive) from our accredited sponsors this past year. This exchange of information has kept us all better informed.

Annual workshop

The Annual CMERC Workshop will take place on Saturday, November 13, from 9:00 a.m. to 3:00 p.m., at the MedChi Building, 1211 Cathedral Street, Baltimore. The focus of this year's program will be "System 98," a new accreditation document recently adopted by the Accreditation Council for Continuing Medical Education (ACCME).

Murray Kopelow, M.D., executive director and secretary of the ACCME, has been invited as the keynote speaker. Dr. Kopelow will be able to provide us with his insight because he played an integral role in compiling the document.

The following is a brief synopsis of System 98 and what it involves.

The Essential Areas have been consolidated to include the following three areas:

Essential Area 1: ..... Purpose and Mission
Essential Area 2: ..... Educational Planning and Evaluation
Essential Area 3: ..... Administration

Each Essential Area is subdivided into various elements, which must be implemented by a provider of CME. The ACCME has developed "Measurement Criteria" for each "Element in the Essential Areas." These criteria are used to measure whether an accredited provider meets the basic level of accreditation.

Each element is classified into four levels of compliance, ranging from "noncompliance to exemplary compliance." These elements have defined criteria by which a provider's activities are presented and the submitted documentation judged.

This is a brief summary of some of the things we will be discussing at the workshop. Please plan to attend. The workshop will not only be an opportunity for our providers to ask CME questions, but to network with other providers.

Additional materials will be mailed to our accredited sponsors as the details are confirmed. In the meantime, if you have any questions, please feel free to contact Mary DuLaney, Membership and Education Coordinator at MedChi, 410-539-0872, ext. 308.

Mergers/potential mergers

As a result of the dynamics of the healthcare industry, many institutions have undergone mergers over the past several months. The CMERC urges its accredited sponsors to communicate with the staff at MedChi in the event that there are issues that may arise from a merger or potential merger. The committee has developed guidelines that speak to this issue; Policies and Guidelines on Mergers is available in the CMERC Handbook.

Staff changes

Internal changes at MedChi directly affect the CMERC. Mary DuLaney has accepted the position of Membership and Education Coordinator, and will be the staff person to contact regarding any questions about continuing medical education. Mary can be reached at MedChi, ext. 308, or by e-mail mary@mail.medchi.org In addition, Rhonda Wicks has been hired as a part-time administrative assistant to the CME department. Rhonda is available at ext. 310 or by e-mail, rhonda@mail.medchi.org.

Approval of Continuing Medical Education programs

The following sponsors have been reaccredited:

1. Harford Memorial Hospital
2. Howard County General Hospital, Inc.
3. Medical Mutual Liability Insurance Society of Maryland
4. St. Agnes Healthcare, Inc.

JULES CAHAN, M.D., IS A MEMBER OF THE CONTINUING MEDICAL EDUCATION REVIEW COMMITTEE. ■

The purpose of this newsletter is to inform CME chairpersons, CME committee members, and all interested physicians about the activities of MedChi's Continuing Medical Education Review Committee (CMERC) and about the rules and procedures that affect the implementation of CME programs in Maryland. When appropriate, news from the ACCME (Accreditation Council for Continuing Medical Education) is included.

Congratulations Med Chi!

Best Wishes for Continued Future Success

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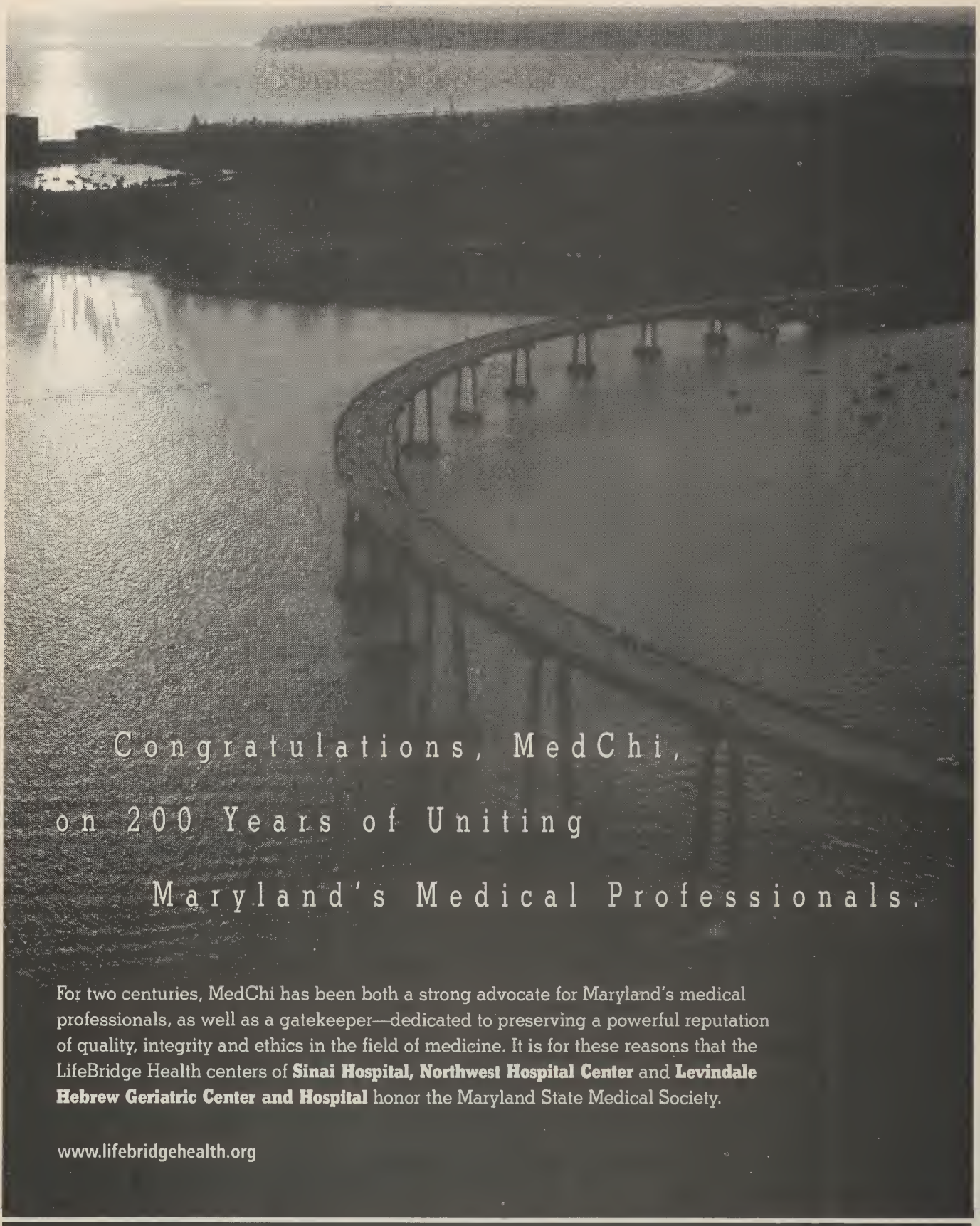
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For two centuries, MedChi has been both a strong advocate for Maryland's medical professionals, as well as a gatekeeper—dedicated to preserving a powerful reputation of quality, integrity and ethics in the field of medicine. It is for these reasons that the LifeBridge Health centers of **Sinai Hospital, Northwest Hospital Center** and **Levindale Hebrew Geriatric Center and Hospital** honor the Maryland State Medical Society.

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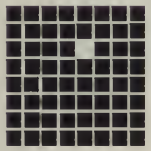
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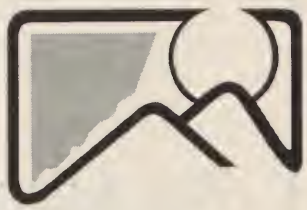
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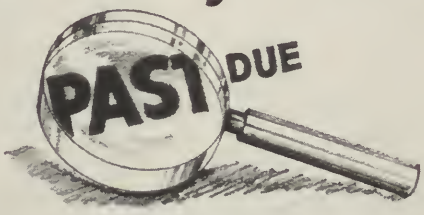
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Quality quarterly

Delmarva Foundation's Report on Current Quality Improvement Projects

Physician Organizations Come Together to Improve Quality

Physician leaders from the Maryland chapters of the American College of Physicians, the American Academy of Family Physicians and the State Medical Society met with Dr. Georges Benjamin, (Maryland's new Secretary of Health) and Delmarva Foundation this past July. The purpose of this meeting was to forge a new collaborative agreement between the organizations to work together towards improving the health of Maryland Medicare beneficiaries. All agreed to support Delmarva's Campaign for Medicare Excellence, which focuses on the following statewide performance measures:

Adult Immunizations

- Pneumococcal vaccination rate (at least once in a lifetime after age 65)
- Annual influenza vaccination rate

Breast Cancer Screening

- Biennial screening mammography rate (up to age 70 for all women covered by Medicare)

Diabetes

- Annual glycated hemoglobin determination
- Biennial dilated retinal examination
- Biennial lipid profile measurement (Total cholesterol, HDL-cholesterol, LDL-cholesterol, Triglycerides)

Representatives from each organization will work together this year to develop innovative strategies to help Maryland physicians increase the delivery of these services to their elderly patients. We are interested in hearing about examples of successful office-based systems (reminders, tracking, etc.) currently in use for these clinical areas. Please e-mail any suggestions to santa mariaj@dfmc.org or call Don Casey, MD, MPH at 410-684-3362.

We plan to initiate a similar workgroup in the District of Columbia.

A Message from DHMH Secretary Georges C. Benjamin, MD

"As Secretary of the Maryland Department of Health and Mental Hygiene (DHMH), one of my priorities is health care quality. One of the best ways to ensure quality is to emphasize prevention in our daily medical practice. To that end, DHMH works collaboratively with many members of the medical community, including the Delmarva Foundation, to emphasize prevention.

"There are three areas where I believe prevention is especially important in improving the quality of care: breast cancer, adult vaccinations, and diabetes.



"One of the best ways to ensure quality is to emphasize prevention in our daily medical practice." — Dr. Benjamin

"Breast cancer screening programs are important for women of all ages. We must, however, do whatever we can to increase mammography screening for Medicare-eligible women up to age 70. Pneumococcal pneumonia remains a deadly disease. We know vaccinations are highly successful in prevention, and must increase their use in people over age 65. I also encourage appropriate and timely utilization of retinal eye exams, extremity exams and hemoglobin A1c screening in the management of diabetes patients. These are critical in achieving the goal of reducing blindness, renal disease and amputations.

"Each of these preventive measures is consistent with quality health care, and I encourage you to make them a part of your routine clinical practice."

National Medical Groups Issue Pneumonia Warning

Senior Citizens are Particularly at Risk Without Proper Immunizations

Recent evidence showing low pneumococcal immunization rates among elderly Americans prompted a health warning to be issued by the American Medical Association and a group of ten major medical societies. The concerted warning calls for greater use of immunizations to combat increasingly resistant strains of bacteria that cause pneumonia, and in severe cases, death.

Despite the fact that Medicare covers the use of a safe and effective vaccine against this virulent strain of bacteria, the rates of preventive immunization remain as low as 45% in the vulnerable over-age 65 population.

In an effort to reverse this trend, the eleven medical societies have joined to increase patient awareness and to distribute authoritatively endorsed treatment recommendations to 224,000 patient care physicians nation-wide.

To avoid "missed opportunities" medical experts advise that all persons at increased risk of infection should have their immunization status assessed—whenever feasible—during any health care encounter.

The consensus recommendations in the Quality Care Alert were developed by the AMA with the assistance of clinical experts representing the American Academy of Family Physicians, the American Academy of Pediatrics, the American Association of Clinical Endocrinologists, the American College of Chest Physicians, the American College of Emergency Medicine, the American College of Obstetricians and Gynecologists, the American College of Physicians - American Society of Internal Medicine, and the American College of Preventive Medicine, the American Geriatrics Society, and the Infectious Disease Society of America.

(Full text of this report available at http://www.ama-assn.org/ad-com/releases/1999/qcarel.htm)

Medicare Beneficiaries Underuse Preventive Care

Preventive services for Medicare fee-for-service patients are dramatically below recommended levels, according to *The Dartmouth Atlas of Health Care,* edited by John Wennberg, MD, MPH.

Mammograms, colorectal screening tests, immunizations for pneumoccocal pneumonia and preventive services for people with diabetes were among the Medicare preventive services tracked in the new edition of the Dartmouth Atlas. Medicare fee-for-service claims data were used to compare different populations' consumption of health care services in 1995-1996.

The rates of services provided varied widely from region to region and even the best regions fell short of recommendations. Information about local variations in medical care is considered a valuable aid in improving clinical services by physician groups and other organizations.

Check out the following links

for further, more detailed prevention information. Or, access these sites directly at prevention.dfmc.org (no "www"!).

Medicare coverage policy for mammography www.medicare.gov/wellness/mammogram.html

Self-Reported Use of Mammography Among Women Aged greater than or equal to 40 Years—United States, 1989 and 1995 www.cdc.gov/epo/mmwr/preview/mmwrhtml/00049638.htm

Use of Clinical Preventive Services by Medicare Beneficiaries Aged greater than or equal to 65 Years www.cdc.gov/epo/mmwr/preview/mmwrhtml/00052024.htm

Annals of Internal Medicine Putting Prevention into Practice: The Patient's Role, Annals of Internal Medicine, 20 April 1999 www.acponline.org/journals/annals/20apr99/putprev.htm

Delmarva's Adult Vaccination Initiative pneumonia.dfmc.org/html/adult_inpatient_vaccination_in.html

1999 Adult Immunization Facts pneumonia.dfmc.org/html/adult_immunization_facts.html

Volume 22 Supplement 1 American Diabetes Association: Clinical Practice Recommendations 1999 Standards of Medical Care for Patients With Diabetes Mellitus www.diabetes.org/DiabetesCare/supplement199/S32.htm

From the 8/18/99 JAMA: "Use of a Low-Literacy Patient Education Tool to Enhance Pneumococcal Vaccination Rates" www.ama-assn.org/sci-pubs/journals/most/recent/issues/jama/oc90357a.htm

Delmarva Supports Maryland Department of Aging SMART Project

Delmarva Foundation staff have conducted 24 presentations throughout Baltimore City this year on behalf of the Maryland Department of Aging, to encourage senior housing residents and senior center attendees to participate in the Department's Senior Mammograms Annual Routine Test (SMART) project. Bea Gaddy, a Baltimore City resident and beast cancer survivor, endorsed the program as a means of reaching an often hard to reach population.



Bea Gaddy talks to Medicare beneficiaries about why annual routine mammograms are a smart choice for older women.

The project was funded through the Maryland Chapter of the Susan G. Komen Breast Cancer Foundation. The Mobile Mammography Van of Maryland General Hospital was accessible for those women who wanted to register for a mammogram the day following the presentation. Other agencies involved in carrying out the project included:

- Baltimore City Commission on Aging and Retirement Education
- Housing Authority of Baltimore City
- Department of Health and Mental Hygiene-Breast and Cervical Cancer Early Detection Program
- Baltimore City Health Department
- Health Care Financing Administration

A Woman's Chance of Getting Breast Cancer

By age 40, one out of 217	.4%
By age 50, one out of 50	2%
By age 60, one out of 24	4%
By age 70, one out of 14	7%
By age 80, one out of 10	10%

Age is the most important factor in the risk for breast cancer. The older a woman is, the greater her chance of getting breast cancer. No woman should consider herself too old to need regular screening mammograms.

Model Good Neighbor Flu Project

Increasing the immunization rates among Medicare beneficiaries living in Maryland and the District of Columbia is the goal of Delmarva Foundation's annual flu and pneumonia prevention initiatives. An important focus is the African American population, which historically is immunized at half the rate of the Caucasian population.

In 1996, only 17% of Baltimore's African American beneficiaries with Medicare Part B coverage obtained a flu shot — far below the national average. A unique collaboration between HCFA, the Baltimore City Department of Health, Morgan State University, and Delmarva Foundation produced the Horizons Good Neighbor Flu project, focused on Baltimore City and targeted African Americans during the 1997 and 1998 flu shot seasons.

The project's quality indicators examined the rate at which doctors immunized beneficiaries they saw during the influenza season and analyzed some of the factors affecting these rates. Practical toolkits were sent to physician practices. One popular tool was a list of excuses beneficiaries give for not getting a flu shot, and suggested answers. (See "What to Say When the Patient Says No Thanks" on page 5.)

The rate of billed immunizations among African Americans increased from 14.20% in 1995 to 16.67% in 1996, and to 18.90% in 1997. It was still significantly lower than the national rate for African Americans of 24.3%.

Medicare Preventive Services Help Beneficiaries Stay Healthy

Your patients may ask about the various screenings, vaccinations, and health management programs that are available as a Medicare benefit. They need your help in determining their health risks and need for these preventive screenings. Major Medicare preventive services are described on the chart on page 6. Put copies of it out where your patients can see it. They'll have a better understanding of Medicare's preventive services.

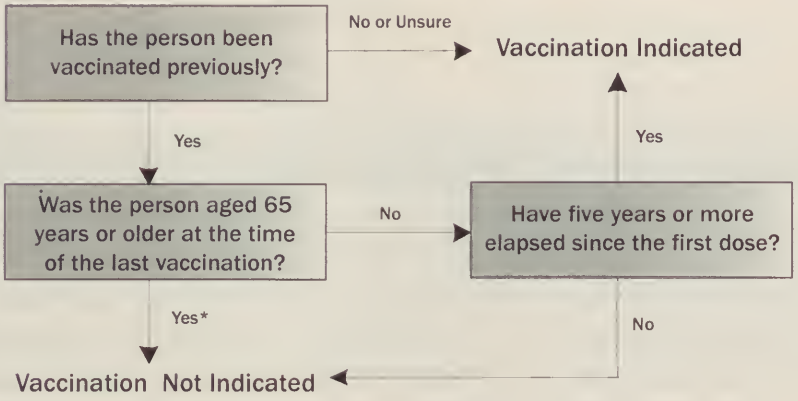
In fact, some of Medicare's most important covered medical services are for beneficiaries who aren't sick. They are preventive services designed to help older people stay healthy. Medicare provides preventive services and wellness support by helping to pay for:

- flu and pneumococcial vaccinations
- screenings for breast, cervical, and colorectal cancer
- diabetes self-management and blood glucose monitoring
- bone mass measurements for osteoporosis

October is National Breast Cancer Awareness Month—October 15th is National Mammography Day.

Do I Need a Pneumonia Shot?

The "pneumonia shot" is recommended for all adults who are 65 years of age and older. Most elderly people need to receive it only once in their life, and it can be taken any time during the year. Revaccination is not routinely recommended for all healthy persons 65 years of age and older. People 65 and older should receive a second dose of pneumoccal vaccine if they received the first dose more than five years previously, and were less than 65 years of age at the time of the first dose. The CDC's algorithm, reproduced from Morbidity and Mortality Weekly Report, Volume 46, No. RR-08, is published here.



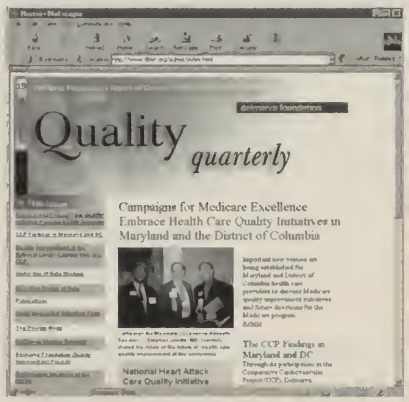
* For any person who has received a dose of pneumococcal vaccine at age 65 years or older, vaccination is not indicated. MMWR, Vol 46, No. RR08

Physician Referral Number One Motivator for Screening Mammogram

To get the patient's perspective for a quality improvement project on mammography screening, Delmarva Foundation for Medical Care asked eight female Medicare beneficiaries to be interviewed together in a focus group. Most women don't think about mammography unless their doctor recommends it, they agreed.

Other reasons why more women don't take advantage of mammography screening services the group identified were:

- Women in this age group are not aware of the increased risk for breast cancer as they get older.
- Women living alone are reluctant to pursue mammography screening alone and are reluctant to travel outside the health support system.
- Women felt that if they were not sexually active, mammographies and pap smears were unnecessary.



Visit Quality quarterly's Internet Web site along with Delmarva Foundation's other Web pages. Start at www.dfmc.org.

Breast Cancer Screening Rates Still Lag Behind National Recommendations, Particularly for Older Women

A recent article in the *Journal of the American Board of Family Practice* titled "Current Perspectives on Physician Barriers to Breast Cancer Screening" examines why breast cancer screening rates still lag behind national recommendations and goals, particularly for older women.

Reasons given for not ordering a screening mammogram are displayed in the accompanying table. Half the physicians responding in 1995 cited that the woman did not come in for a routine visit as the most frequent reason for not ordering screening mammograms, whereas nearly one half (47%) said another physician refers the patient for mammography as the reason. Less frequently cited reasons for nonreferral were the patient is reluctant or anxious, she has no insurance or cannot afford a mammogram, or she has too many other health problems. Four percent responded that they "usually" or "sometimes" do not refer for mammography because previous mammograms have not been useful, and another 4% because clinical breast examination is sufficient. [J Am Board Fam Pract 12(1):8-15, 1999. © 1999 American Board of Family Practice]

Table 1: Frequency of Reasons for Not Ordering Screening Mammograms for Women Aged 50 to 75 Years

Reasons for Not Ordering a Screening Mammogram	Usually No (%)	Sometimes No (%)	Rarely No (%)	Never No (%)
She does not come in for a routine visit	203 (50.0)	140 (34.5)	40 (9.9)	23 (5.7)
Another physician refers her for mammography	190 (46.5)	173 (42.3)	25 (6.1)	21 (5.1)
She is reluctant or anxious	37 (9.0)	102 (27.3)	117 (28.5)	144 (35.1)
She has no insurance, cannot afford mammogram	11 (2.7)	72 (17.7)	140 (34.5)	183 (45.1)
She has too many other health problems	4 (2.3)	80 (19.8)	129 (31.9)	186 (45.9)
Her previous mammograms have not been useful	2 (0.5)	15 (3.7)	86 (21.1)	304 (74.7)
The clinical breast examination is sufficient	2 (0.5)	15 (3.7)	47 (11.6)	342 (84.2)
Other	9 (15.8)	7 (12.3)	10 (17.5)	31 (54.4)

Reprinted with permission from the *Journal of the American Board of Family Practice*, 12:1, page 11.

What To Say After Your Patient Says "No Thanks" to the Flu Shot

1. I never get sick. Exactly the reason for you to take the flu shot. If you are age 65 or older, you are at increasingly high risk of dying from influenza if you get the infection. In 1918, over 1 million Americans died from influenza and its complications. This vaccination will help to boost your immune system and protect you from getting sick with the flu.

2. I got that shot once and it made me very sick. The latest vaccine is much less likely to cause an adverse reaction, thanks to newer technology. Most all people who have had a reaction to older vaccines in the past are not at increased risk for side effects from the newer shot.

3. I'm afraid of getting the flu from the flu shot. The vaccination does not cause the flu. In fact, side effects from this shot are very uncommon. The worst that is likely to occur is that you will experience a little soreness and / or redness at the site of the injection. You have less than a 1 in 100 chance of experiencing a low-grade fever and mild flu-like symptoms. These usually last 24 hours and are easily treatable.

4. I've heard that you can get other infections from this vaccination. Not true. You cannot get an infection from the flu vaccine.

5. Let me think about it for awhile. The flu season will start very soon, so don't wait too long. As your doctor, I really think it's important for you to reduce your chances of dying from the flu.

Medicare Part B Covered Preventive Services

Benefit	Eligible Beneficiaries	What You Pay
Vaccinations: Pneumococcal Vaccination: One may be all you ever need—ask your doctor. Flu Shot: Once per year. Hepatitis B Vaccination: If you are high risk for hepatitis. *	All Medicare beneficiaries	No coinsurance and no Part B deductible for flu or pneumococcal vaccinations. For Hepatitis B vaccination, 20% of the Medicare approved amount after the Part B deductible.
Screening Mammogram: Once per year. *	All female Medicare beneficiaries age 40 and older	20% of the Medicare approved amount with no part B deductible.
Pap Smear and Pelvic Examination: (Includes a clinical breast exam) once every three years. Once per year if you are high risk for cancer of the cervix or had an abnormal Pap smear in the preceding 3 years.	All female Medicare beneficiaries	No coinsurance and no Part B deductible for the Pap smear (clinical laboratory charge). For doctor services and all other exams, 20% of the Medicare approved amount with no Part B deductible.
Diabetes Monitoring: Includes coverage for glucose monitors, test strips, lancets, and self-management training. *	All Medicare beneficiaries with diabetes (insulin users and non-users)	20% of the Medicare approved amount after the annual Part B deductible.
Colorectal Cancer Screening: Fecal Occult Blood Test once every year. Flexible Sigmoidoscopy once every four years. Colonoscopy once every two years if you are high risk for cancer of the colon. Doctor can substitute Barium Enema for sigmoidoscopy or colonoscopy.	All Medicare beneficiaries age 50 and older	No coinsurance and no Part B deductible for the fecal occult blood test. For all other tests, 20% of the Medicare approved amount after the annual Part B deductible.
Bone Mass Measurements: Varies with health status.	Certain Medicare beneficiaries at risk for losing bone mass	20% of the Medicare approved amount after the annual Part B deductible.

source — www.medicare.gov

*** Clinical areas targeted in Delmarva's Campaign for Medicare Excellence.**

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September/October, 1999
Updates: Adult and Pediatric Immunization Issues

Adult Immunizations: Records

For adults as well as children, immunizations are an important part of general preventive health care. Yet adult immunizations, even among Marylanders 65 years of age or older, seem to be easier said than done. According to the 1997 Behavioral Risk Factor Surveillance Survey, 63.4% of Marylanders aged 65 years or older received the influenza vaccine, but only 41% had received pneumococcal vaccine. The national *Healthy People 2000* public health goals are for at least 60% of senior Marylanders to receive the pneumococcal vaccine.

Studies have shown that your recommendation about vaccination continues to be one of the most important factors in your patient's decision to get vaccinated. Most doctors already know the recommended adult immunization schedule. But during a busy office visit, often focussed on a particular medical problem, the patient's vaccination needs and status may become a lower priority.

On the next page is a model Adult Vaccination Record form. This form will help you and your patients by ensuring that they are aware of the vaccinations they need, by recording what vaccinations they have received, and by preventing unnecessary vaccinations during a health emergency or if they change doctors. The form is designed to be completed by the physician and may be carried by the patient, which is similar to the way parents are encouraged to carry their children's pediatric immunization records to doctor visits. A credit card sized adult immunization record, which is more convenient to carry, can be obtained by calling the Epidemiology and Disease Control Program's Center for Immunization at 410-767-6679.

The Adult Immunization Record form on the next page was developed by the Florida Medical Association and is distributed by the National Immunization Program of the Centers for Disease Control and Prevention (CDC). It may be reproduced without permission. One additional copy of the Adult Immunization Record, suitable for duplication, may be obtained without charge from the Center for Immunization, at the number above.

Thank you for your continuing your efforts to protect senior Marylanders from influenza and pneumococcal disease this fall.

Adult Immunization Reference Tables

For you and your patient's information, several tables are included on the second following page. These explain indications and contraindications for vaccines for adults.

Rotavirus Vaccine (RV) and Intussusception

As you are probably aware, a recent MMWR article[1] reported 15 cases of intussusception reported to the Vaccine Adverse Event Reporting System (VAERS) occurring among approximately 1.5 million doses of RV given. The CDC is conducting active surveillance for intussusception and RV. A more precise determination of any risk is expected by November, prior to the start of rotavirus infection season in most parts of the United States. Until this study is finished, **providers should postpone use of rotavirus vaccine until November.**

1. CDC. Intussusception among recipients of Rotavirus Vaccine: United States, 1998-1999. MMWR 1999;48:577.

Adult Immunization Record

Vaccine Who should get it	Dose	Date	Signature of Provider	Next Dose
Hepatitis A	1			
Adults at risk	2			
Hepatitis B	1			
Adults at risk	2			
	3			
Influenza	Annual			
Adults 65 and older	Annual			
Adults at risk	Annual			
Adults who do not	Annual			
want to get the flu	Annual			
	Annual			
Measles, Mumps, Rubella (MMR)	1			
Adults born after 1956	2			
Pneumococcal	1			
Adults 65 or older Adults at risk	Repeat			
Tetanus and Diphtheria (Td)	Booster			
Booster every 10 years	Booster			
if adult has had at least	Booster			
three basic shots	Booster			
Varicella (Chickenpox)	1			
Adults who have not had chickenpox (varicella)	2			
Other				

Developed by the Florida Medical Association based on the Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention. This form may be reproduced without permission.

Contraindications to Adult Vaccinations (8/99)

Vaccine	Who should **NOT** get vaccinated
Chickenpox (Varicella)	• Women who are pregnant or who may become pregnant within 1 month of vaccination should not receive varicella (chickenpox) vaccine • Adults with previous allergic reactions to any component of varicella (chickenpox) vaccine (check with your doctor)
Hepatitis A	Adults with previous allergic reactions to any component of hepatitis A vaccine (check with your doctor)
Hepatitis B	Adults with previous allergic reactions to any component of hepatitis B vaccine (check with your doctor)
Influenza	Adults with previous allergic reactions to any component of influenza vaccine (check with your doctor)
Measles, Mumps, Rubella (MMR)	• Women who are pregnant or who may become pregnant within 3 months of vaccination should not receive MMR vaccine • Adults with previous allergic reactions to any component of MMR vaccine (check with your doctor)
Pneumococcus	Adults with previous allergic reactions to any component of pneumococcal vaccine (check with your doctor)
Tetanus and Diphtheria (Td)	Adults with previous allergic reactions to any component of Td vaccine (check with your doctor)

Vaccines for Adults: Do You Need Vaccination? (8/99)

If you …	Ask your doctor about the following vaccines:
Are 65 years of age or older	Influenza, pneumococcus
Are a man having sex with other men	Hepatitis A and B
Are a student in a college or university	MMR, varicella
Are a teacher or staff member at schools or colleges	Influenza, pneumococcus, varicella
Are an Alaskan Native or belong to certain Native American populations	Pneumococcus
Are on long-term kidney dialysis	Influenza, pneumococcus
Have a sexually transmitted disease	Hepatitis B
Have a weakened immune system from long-term steroid treatment; cancer treatment; transplant; or HIV infection	Influenza, pneumococcus, Hemophilus influenzae type B
Have alcoholism	Pneumococcus
Have long-term liver disease	Hepatitis A
Have serious heart, lung or kidney disease, anemia or "sugar" diabetes	Influenza, pneumococcus
Have sickle cell anemia	Pneumococcus Hemophilus influenzae type B
Provide essential community services (police, fire fighters) or health services (nurses, doctors, EMS providers)	Influenza, pneumococcus
Travel to other countries	Hepatitis A and B, MMR, varicella, and others
Use illegal (street) drugs or share needles or works	Hepatitis A and B
Work in a hospital or health-care setting or Have job contact with others' blood or body fluids	Hepatitis B, Influenza, MMR, varicella
Work or play in woods or brushy areas, Or are likely to be in contact with ticks	Lyme disease

Reference: Immunization of Adults: Your Call to Action (booklet). CDC, Atlanta, 1998

Thimerosal in Vaccines: Impact on Perinatal Hepatitis B Prevention

A recent joint statement of the American Academy of Pediatrics and the United States Public Health Service (AAP-USPHS) about the presence of the preservative chemical thimerosal in vaccines and cumulative mercury exposure, indicated that to reduce exposure, ***physicians may delay the first dose of hepatitis B vaccine to 2 – 6 months, in infants born to HBsAg negative mothers***. Subsequently, the AAP has recommended that the first dose be delayed until the child is 6 months of age (unless thimerosal free vaccine is used, in which case the AAP also recommends 2 months of age to begin the series). The DHMH Center for Immunization recommends beginning the series at 2 months, rather than 6 months, to ensure completion of the series.

Premature or low birth weight infants born to HBsAg negative mothers should begin the hepatitis B series when they reach term gestational age and a weight of at least 5.5 lbs. (2.5 kg). **To prevent hepatitis B transmission, infants born to HBsAg positive mothers should continue to be vaccinated at birth** (please see table below).

Note also: Due to the continuing threat of Hib disease, pertussis and tetanus to infants, Hib and DTaP vaccines should not be delayed. And please note: there is no thimerosal in *any brand of* polio vaccines.

Reference: CDC. Thimerosal in Vaccines: A Joint Statement of the American Academy of Pediatrics and the United States Public Health Service. MMWR 1999;48:563-565.

Recommendations for Perinatal HBV Prevention at Birth:

Category of Infant	Vaccinate at Birth?	HBIG at Birth?
Any infant born to HBsAg **positive** mother	YES	YES
Any infant born to HBsAg **unknown status** mother	YES	No
Normal term infant born to HBsAg **negative** mother not a member of high risk group	No (Begin series at 2-6 months)	No
Normal term infant born to HBsAg **negative** mother, member of high risk group[1]	YES	No
Premature[2] infant born to HBsAg **negative** mother	No (Begin series at 2-6 months)	No
Low birth weight[3] infant born to HBsAg **negative** mother	No (Begin series at 2-6 months)	No

Notes:
1 – High-risk groups include Asian Pacific islanders, immigrants from countries in which HBV is of high or intermediate endemicity and households with persons with chronic HBV infection.
2 – HBV vaccine may be started at term gestational age.
3 – HBV vaccine may be started at a weight of 5.5 lbs. (2.5 kg).

The Johns Hopkins Medical Institutions

All courses are at the Thomas B. Turner Building unless otherwise indicated. For information on continuing medical education activities, contact the Office of Continuing Medical Education, 720 Rutland Ave., Baltimore, MD 21205, 410-955-2959, Fax 410-955-0807 (e-mail: cmenet@som.adm.jhu.edu).

41st annual Emil Novak memorial course in gynecology, gynecological pathology, endocrinology, and high-risk obstetrics, sponsored by Johns Hopkins University School of Medicine and the department of obstetrics and gynecology, at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 45 Cat 1 AMA credits. Fee: $950/physicans; $750/residents, fellows and allied health professionals. **Oct. 17–22**

2nd annual gynecologic pathology: approaches to common problems with emphasis on new entities and techniques, sponsored by the department of pathology, Johns Hopkins University School of Medicine, at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 14 Cat 1 AMA credits. Fee: $500/physicians; $250/residents, fellows, allied health professionals. **Oct. 29–30**

Eighth annual update on obstetric anesthesia, sponsored by the Johns Hopkins University School of Medicine and the department of anesthesiology and critical care medicine, at the Renaissance Harborplace Hotel, Baltimore, Maryland. Credits: 1-8 Cat 1 AMA credits. Fee: $195/physicians; $145/CRNAs; $75/residents, fellows, SRNAs. **Nov. 6**

Advanced pediatric life support courses, sponsored by Johns Hopkins University School of Medicine and the Johns Hopkins Pediatric Trauma Center. Credits: 21 Cat 1 AMA credits. Fee: $675. **Nov. 8–10**

3rd annual Johns Hopkins clinical research symposium: clinical trials and tribulations in 2000 and beyond, sponsored by the Johns Hopkins University School of Medicine. Credits: 7.5 Cat 1 AMA credits. Fee: $250/physicians; $200/residents, fellows, allied health professionals. **Dec. 3**

University of Maryland School of Medicine

For each course, additional information may be obtained by contacting the Program of Continuing Education, University of Maryland School of Medicine, Room 14-011, BRB, 655 W. Baltimore St., Baltimore, MD 21202 (410-706-3956), or by calling the phone number listed after a specific program. Fax 410-706-3103.

Understanding retina surgery for the comprehensive eyecare specialist and eye MD, sponsored by University of Maryland School of Medicine in conjunction with the Maryland Center for Eye Care, at BWI Airport Hotel, Baltimore, Maryland. Info: Tina Simmons, (410)328-5934, Fax: (410)328-6346. **Oct. 1**

Miscellaneous

4th annual fingers to toes orthopaedic review for PCPs, sponsored by the Washington School of Medicine, St.Louis, Missouri 63110-1093. Info: (314)362-6891, (800)325-9862, Fax: (314) 362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Oct. 1–2**

Breast imaging & interventions update, sponsored by the University of California, San Diego, School of Medicine, at the Hotel Del Coronado, San Diego, California. Credits: 15 Cat 1 AMA credits. Fee: $475/physicians; $350/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 1–3**

Miscellaneous

Management of cardiac arrhythmias in daily practice: featuring case presentations, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 17 Cat 1 AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301)897-9745. **Oct. 4–6**

24th annual San Diego postgraduate radiology review, sponsored by the University of California, San Diego, School of Medicine, at the Hotel Del Coronado, San Diego, California. Credits: 39 Cat 1 AMA credits. Fee: $995/physicians; $700/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 4–8**

Infectious disease '99 board review course, sponsored by The Center for Bio-Medical Communication, at the Ritz Carlton Hotel, Tysons Corner, McLean, Virginia. Credits: 36 Cat 1 AMA credits. Fee: $945/physicians; $745/physicians-in-training. Info: Center for Bio-Medical Communications, Inc., (201) 342-5300, Fax: (201342-7555, e-mail: cmeinfo@cbcbiomed.com. **Oct. 6–10**

19th annual comprehensive review of vascular and interventional radiology, sponsored by the University of California, San Diego, School of Medicine, at the Hotel Del Coronado, San Diego, California. Credits: 18.75 Cat 1 AMA credits. Fee: $550/physicians; $375/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 8–10**

Mt. Sinai 1999 body imaging update, sponsored by the International Institute for Continuing Medical Education, at The Plaza Hotel, New York, New York. Credits: 22.5 Cat 1 AMA credits. Fee: $775/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 9–12**

Mt. Sinai 1999 brain, spine, neurovascular and ENT imaging update, sponsored by the International Institute for Continuing Medical Education at The Plaza Hotel, New York, New York. Credits: 25.5 Cat 1 AMA credits. Fee: $795/physicians; $550/residents, fellows, technologists. Info: Ryals & Associates, Inc., (770)641-9773, Fax: (770)552-9859, http://www.ryalsmeet.com. **Oct. 13–17**

Contemporary nuclear cardiology: state-of-the-art review, case studies/practical concepts, managed care and latest licensing issues, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 21.5 Cat 1 AMA credits. Info: (800)253-4636, ext.654, (301)897-5400, ext. 654, Fax: (301) 897-9745. **Oct. 14–16**

8th annual wound care symposium, sponsored by the Virginia Commonwealth University Medical College of Virginia Campus, at the Williamsburg Marriott Hotel, Williamsburg, Virginia. Credits: 15 Cat 1 AMA credits. Fee: $380. Info: (800)413-2872, (804)828-3640, Fax: (804)828-7438. **Oct. 15–17**

51st annual state-of-the-art conference: challenges and controversies in occupational medicine, sponsored by the American College of Occupational and Environmental Medicine, at the Hyatt Regency San Antonio, San Antonio, Texas. Info: ACOEM, (847)818-1800, ext. 389; Fax 847- 818-9266; http://www.acoem.org. **Oct. 17–21**

Cardiac ascultation for physician assistants, nurse practitioners, and cardiac nurses, sponsored by the American College of Cardiology, at the Heart House, Bethesda, Maryland. Credits: 19 Cat 1 AMA credits. Info: (800) 253-4636, ext.654, (301) 897-5400, ext. 654, Fax: (301)897-9745. **Oct. 20–22**

Allergy abroad '99, sponsored by the Washington University School of Medicine at Paris, Dijon, Lyon, and Montpellier, France. Credits: 18 Cat 1 AMA credits. Fee: $545/physician; $445/allied health professional. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, e-mail: CME@msnotes.wustl.edu. **Oct. 20–31**

Miscellaneous continued

25th annual symposium of obstetrics and gynecology, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. — **Oct. 21–22**

Advances in obstetrics & gynecology, sponsored by the Virginia Commonwealth University at the Omni Richmond Hotel, Richmond Virginia. Credits: 14 Cat 1 AMA Credits. Fee: $425. Info: (800)413-2872, (804)828-3640, Fax: (804)828-7438. — **Oct. 21–23**

New techniques in urinary incontinence and female urology, sponsored by the Washington School of Medicine, presented by the division of urologic surgery, at the Eric P. Newman Education Center, Washington University Medical Center, St. Louis, Missouri. Credits: 8 Cat 1 AMA credits. Fee: $250/physicians; $150/physician-in-training, allied health professionals. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. — **Oct. 23**

Cases in echocardiography: TEE, doppler, and stress — interpretation and clinical decision making for the advanced echocardiographer, sponsored by the American College of Cardiology at the Heart House, Bethesda, Maryland. Credits: 17.5 Cat 1 AMA credits. Info: 800-253-4636, ext. 654. — **Oct. 28–30**

Contemporary cardiothoracic surgery, sponsored by the Washington School of Medicine, presented by the division of cardiothoracic surgery, at the Eric P. Newman Education Center, Washington University Medical Center, St. Louis, Missouri. Fee: $625 (combined course). Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. — **Oct. 28–30**

6th annual current topics in cardiothoracic anesthesia, sponsored by the Washington School of Medicine, presented by the division of cardiothoracic anesthesia, at the Eric P. Newman Education Center, Washington University Medical Center, St. Louis, Missouri. Fee: $425/physician; $250/CRNA, RN, PA, perfusionist. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. — **Oct. 28–30**

Comprehensive gynecology: a clinical update for the practicing physicians, sponsored by the Center for Bio-Medical Communications, at the Roosevelt Hotel in New York. Credits: 14 Cat 1 AMA. Fee: $600. Info: (201) 342-5300, Fax: (201)342-7555, e-mail: cmeinfo@cbcbiomed.com — **Oct. 29–31**

Resolving the riddle of the crying infant, sponsored by the Children's National Medical Center, at The Doubletree Hotel, Rockville, Maryland. Credits: 4 Cat 1 AMA credits. Fee: $50/physicians; $30/nurse practitioners; $25/physicians-in-training. Info: Sharon Kirksey, (202)884-5990, Fax: (202)884-5993. — **Nov. 3**

Resolving the riddle of the crying infant, sponsored by the Children's National Medical Center, at The Holiday Inn, BWI Airport, Linthicum, Maryland. Credits: 4 Cat 1 AMA credits. Fee: $50/physicians; $30/nurse practitioners; $25/physicians-in-training. Info: Sharon Kirksey (202)884-5990, Fax: (202)884-5993. — **Nov. 4**

Physician executive leadership, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. — **Nov. 5–6**

Clinical applications of Buddhist principles, sponsored by Sheppard Pratt Health System, at the Conference Center at Sheppard Pratt, Baltimore. Info: (410)938-4592, Fax: (410)938-4596, e-mail: bjobson@sheppardpratt.org. — **Nov. 6**

Miscellaneous continued

Clinical pulmonary update (Napa Valley), sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Nov. 11–14**

Consultation-liaison psychiatry: educators for the 21st century, sponsored by the Academy of Psychosomatic Medicine, at the Hyatt Regency New Orleans, New Orleans, Louisiana. Credits: 24.75 Cat 1 AMA credits. Fee: $320/doctoral APM member or abstract/poster presenter and allied health non-doctoral; $150/fellow, resident, student; $425/doctoral non-member. (prior to 10/20). Info: Executive director, A.P.M., 5824 N. Magnolia, Chicago, Illinois 60660. **Nov. 18–21**

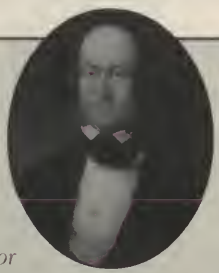
Minimally invasive surgery (Argentina), sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Dec. 3–5**

5th annual sports medicine for the primary care physician, sponsored by the Office of Continuing Medical Education, Virginia Commonwealth University, Medical College of Virginia Campus, in Williamsburg, Virginia. Credits: 16 Cat 1 AMA credits. Fee: $395. Info: Nancy Mervis, (800)413-2872, (804)828-3640, Fax: (804)828-7438. **Dec. 3–5**

Contemporary women's health issues, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Dec. 10**

Topics in cardiology, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. e-mail: CME@msnotes.wustl.edu. **Dec. 11**

Sixteenth annual CME clinical update in pulmonary disease, sponsored by the department of pulmonary medicine, Deborah Heart and Lung Center, New Jersey, at the Sheraton Atlantic City Convention Center Hotel, Atlantic City, New Jersey. Credits: 7 Cat 1 AMA credits. Fee: $125/physicians; $75/allied health professionals, physicians-in-training. (after Oct. 27th, $175 and $100, respectively). Info: : (201) 342-5300, Fax: (201)342-7555, e-mail: cmeinfo@cbcbiomed.com. **Dec. 11**



Richard Wilmot Hall, 1785-1847

ARTIST UNKNOWN

Born in Harford County, Dr. Hall received his M.D. from the University of Pennsylvania in 1806. Although most of his practice was in obstetrics, he served as surgeon for the 51st Regiment of Maryland Militia during the Battle of Baltimore in 1814. He translated Larrey's Memoirs of Military Surgery.

PHYSICIAN'S RECOGNITION AWARD

For the months of May, June, July 1999, the physicians listed below received the American Medical Association (AMA) Physician's Recognition Award. Established in 1968, the award's purpose is to encourage physician participation in continuing medical education and to recognize those physicians who have voluntarily completed programs of continuing medical education.

Obiaghanwa Sta Aghazu
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Shilpa Harshad Amin
Twanna S. Ammons
Andriana S. Andrade
Yair Anikster
Elif Arioglu
Vivian Lee Artis
Assadour Assadourian
Thomas Mario Attard
Azam Baig
Lili Ayala Barouch
Allan Sidney Berger
Lesly Berger
Peter Betz
Philippe Charles Bishop
David Allen Blake
Jeffrey Lynn Bonacci
Bernadette Bonaparte
Crawford Southwell Brown
Donnamarie Erika Brown
Gerald Stephen Brown
Sandra Jean Buchman
Beverly Mardelle Calkins
Wilhelmina G. Camina
Vincent Agatino Cantone
Robert Jospeh Carnathan
Eric J. Carr
Patrick Miao-Hsin Chen
Bart Chernow
Richard SC Chuang
Richard Michael Cirillo
Claudia Viola Claiborne
Benjamin Boris Cooperman
Chas Richard Cortinovis
Wilhelmina M Cruz
Dennis John Cunningham
Erik Alan Dahl
Holly Ryerson Dahlman
Ieon L O Dawson
Thomas Baker Day
Kamalinee V. Deshpande
Laurence Desi
Shama Kanti Dhandha
Gervacio Daniel Diaz
Donald A. Dibbern
Gordana Diglisic
Cristobal Gabriel Duarte
Leonard Ehianu Egede
Ibanga Michael Ekaem
Babak Eliassi-Rad
Yusri Ali Elsayed
Fer Eren
Donna Michelle Eversley
Joseph M. Flynn
Melvin Miles Friedman
Geoffrey Matthew Gabriel
Jonathan Gitter
Miguel Jose Gomez
Pamela Guha
Shwe Mra Gyaw
William Henry Harpster
Syed Hamid Hashmi
Jawad UL Hasnain
Susan Jean Henley
Gavin Leon Henry
Edwin Kirk Huang
Naseem K. Humayun
Sarah Ilana Iacobovici
Khondker Kashiful Islam
Jawanza Nyahuma Jabari
Rodney Mark Jackson
Kenneth Scott Jaffe
Peter Shiqing Jiang
Surjit S. Julka
Nelson N. Kalil
Sreelatha Katari
David Ezriel Katz
John Francis Keiser
Jacob Arthur Kirkman
Grace Kobusingye
Ayman A L Koteish
Gail G. Kramer
Gilbert Leon Kukielka
David S. Kung
Jeffrey Scott Landsman
Jacqueline Yenlinh Le
James Jong Lee
Sara Beth Levin
Suzanne M. Levin
Barry Joseph Liberoni
Chimene Linette Liburd
Ke Liu
Stephen Ramsey Lowe
David Chi Lu
Rodney Danl Lucas
Shahab A. Malik
Michael Richard Mann
Cindy P. Margolis
Yudhishtra Markan
Abraham M. Mathew
Mitchell Vincent Mathis
F. Bolanos Meade
Tarun Mehra
Donald Louis Miller
Lisa Nichole Miller
Laura Jean Mirkinson
Laura Annemargare Murphy
David Jeffrey Naiman
Thuanhanh Thi Nguyen
Tuong Tu Nguyen
Richard Austin Nicklas
Richard Wilfred Niska
Chiazo Chioma Nnawuchi
John J. O'Connor
Omobola Adeola Olaniyan
Khairia Yousef-F Omran
Zsolt Orban
Mario Rene Ortega
Seth Kwabena Osafo
Manoj D. Panwala
Stephen S. Pappas
Donald Alan Pasquarello
Carolyn J. Pass
Geo Branch Patrick
Karla Michelle Paylor
Joel Abrahm Pearlman
Michael Shannon Pattie
George E. Peoples
Richard P. Petri
Barry M. Potter
Gary Chas Prada
William Glenn Prescott
Eugene E. Protzko
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J. Garrett Reilly
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Paul S. Rhodes
David Henry Ring
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Rizwan Safdar
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Daiva Shetty
Kedar Ravindra Shetye
Yingshan Shi
Vorasuk Shotelersuk
Daniel Adam Singer
Navin Singh
Winston Nelson Smith
Joseph B. Sobel
Sameer Sofat
Armia Ayad Sorial
Karl Aaron Spector
George B. Stackhouse
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Yulanda Dorene Swindell
Antoinette Roslyn Tan
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Christine Theda
Samuel William Trotzky
William Tsungchie Tseng
Raman Rekha Tuli
Ravikant V. Varanasi
Dana James Vick
Igor Boris Voronetsky
Jonathan Richard Walburn
William Powers Warren
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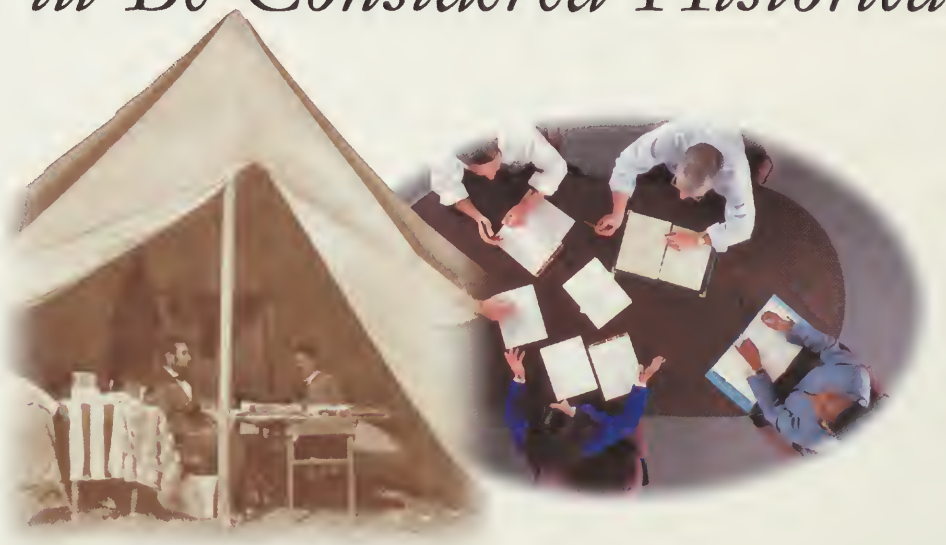
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Focused Issue:

American College of Physicians/American Society of Internal Medicine

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Maryland Chapter

◆

Associates Program

November/December 1999

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Their generous contributions helped make this special issue of the MMJ possible.

The Maryland Chapter of The American College of Physicians

congratulates the department of medicine

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for contributing to the success of the

Maryland ACP Associates. Their advice

and guidance has been the backbone

of the growth and effectiveness of

this flourishing program, which is

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From the Editor's Desk

Au Revoir

AN EDITORIAL

At the time of this writing, early November, which is the printer's deadline for this issue, our Editorial Board has the following report.

On October 26, at our monthly Editorial Board meeting, we were first formally notified by the Executive Director of MedChi that there would be no further funding for the *Maryland Medical Journal (MMJ)*; therefore, this November/December issue would be the last. This action was justified on the basis of diminishing society membership and, therefore, restricted general funds.

Overtures had apparently been made months ago to the Montgomery County Medical Society, without our knowledge, to absorb us within their quarterly magazine, *Montgomery Medicine (MM)*. The resultant costs to the MedChi as a result of this merger would be somewhat more than three-fifths of the present outlay, this going to Montgomery County to defray the costs of printing additional copies and mailing to the entire MedChi membership.

Thus $30,000.00 annually would be going to *Montgomery Medicine* (to be renamed *Maryland Medicine*) instead of the present annual expenditure of $48,000.00—an annual savings of $18,000.00. For this curtailment MedChi is forfeiting the publication of 6 issues of *MMJ* for the year 2000.

However, there appears to be some confusion at the time this issue goes to press. First, according to the Montgomery County President's Message in the October issue of *MM* it is stated, "For the Society, it would mean the assumption of the editorial staffing for *MedChi Physician, Montgomery Medicine* would become a statewide publication called *Maryland Medicine*..." There is no mention of the *MMJ* in this statement. Second, *MM* has been devoted to ethical, business and political issues. The *MMJ* has primarily published scientific articles mostly by Maryland physicians. It has provided an outlet for our younger doctors, those we wish to attract for membership, to enter the scientific world, often introducing firsts in medicine like the therapy of steroids in acute subdeltoid bursitis. Other dissertations, which would have appeared nowhere else, include the probable etiology of the death of Edgar Allan Poe (quoted in publications across the country), one of the world's first cardiac surgeries (performed by a Maryland surgeon), historical facts concerning medicine in Maryland, historical facts concerning the activities of Maryland physicians during the second World War, and on and on.

Because of the above, the *MMJ* is recognized by the *Index Medicus/Medline*. This means that the titles and names of the authors of the articles published in the *MMJ* are listed in this international reference which is the starting point for anyone researching scientific subjects. While *MM* is a fine magazine, because of its content, MedChi would undoubtedly lose its status with *Index Medicus/Medline*.

For the same alleged reasons, diminishing funds, a move was made in 1998 to discontinue publication of the *MMJ*, which at the time was a monthly journal. The House of Delegates at that time elected its continuation on a quarterly basis. Through solicitation of outside funding we were able to publish six issues in 1999 at the cost of four to MedChi. Since we knew of no changes until October 26 your Editorial Board proceeded on the same assumption and continued its advance planning as is required of any journal.

Of course as Editor I am prejudice. But as a physician retired from practice for many years and who is chronologically in a very senior stage of life this is not a personal concern. Instead it is a lament for the loss of a tradition of almost 50 years which sets the MedChi apart from other "unions" whose mission, is to line the pockets of their members with silver.

We are now in the unenviable position of explaining to many authors, some of whom were already notified that it was our intention to publish their presentations, that this is not now possible.

As Editor of the *MMJ*, I wish to thank all members of the present and past Editorial Boards for their sincere devotion to the production of the best possible scientific journal, which in my view has been a credit to medicine in Maryland. I also wish to thank those lay individuals responsible for its publication, those who labored over articles for submission, and the many readers who expressed their interest in various articles that have appeared.

Marion Friedman, M.D.
Editor ■

From the Guest Editors

Maryland ACP Associates Program: a brief history

John H. Mulholland, M.D., FACP, and Emile R. Mohler, Jr., M.D., FACP

Dr. Mulholland is the former chief of medicine, Union Memorial Hospital, and Dr. Mohler is chairman, department of medicine, St. Agnes Hospital. Both are former ACP Governor for Maryland.

Background

In 1968, the American College of Physicians (ACP), reaffirming their educational responsibilities and recognizing the importance of young physicians, created a new membership category entitled Candidate Member. This group was comprised of resident physicians in educational programs who would "close the generation gap between medical school and a first class professional organization."[1] This decision was prophetic. Over 25,000 residents now form an integral part of College activities. In 1970, the name of this membership category was changed to Associate.

In 1974, the Northern Illinois region of the College conceived and initiated the first regional educational activity designed specifically for Associate members: the "Inter-University Associates Meeting." The direction of this event was under Robert M. Kark, M.D., MACP, the Northern Illinois Governor. The initial meeting was met with considerable success, particularly as viewed by the Associates.

Clinical vignette evolves

Under the direction of Armand Littman, M.D., MACP, the succeeding Northern Illinois Governor, the meeting was continued and included residents from all 16 Chicago internal medicine residency programs. A competition was held; each chief resident presented a "clinical vignette." (The word vignette was taken from the french meaning "little vine" to emphasize the necessity of presenting clear and crisp information.) Dr. Littman left no doubt as to what was expected from the residents' presentations. He emphasized to them the short attention span of physicians and the fact that the properly prepared and presented vignette should not require further clarification by question or discussion. All 16 presentations occurred within an hour (Littman, personal communication).

Even today we can admire the objectives of this "first medical sound bite." Robert H. Moser, M.D., MACP, executive director of the College, attended the meeting and noted "some 300 residents were in attendance, and there was actually cheering of the chief residents from their respective house staffs as each of those individuals presented sparkling vignettes."[2]

Dr. Littman served as an inspiration in expanding Associates' activity within the College and was the first chairman of the ACP Associates Committee in 1980. To this day, Dr. Littman remains vigorous and enthusiastic about the ACP Associates and continues to advocate the importance of brief but poignant medical exchange.

A few years later, Boy Frame, MACP, Governor for Michigan, incorporated resident physicians into their already successful annual meeting. In the early 1980s, Associate meetings were begun in Maryland, Louisiana, Mississippi, and California. The first Maryland meeting was held at Union Memorial Hospital in May 1983. It was presided over by Daniel D. Federman, MACP, immediate past president of the College.

The president of the American Board of Internal Medicine, Eugene T. Hilreth, MACP, gave the guest lecture entitled "The ABIM Past, Present and Future," which stimulated attendance by those residents awaiting their turn at the certification process. When the size and attendance of the meeting enlarged, it was moved to St. Agnes Hospital, where it continues to be held, with 1999 marking the 17th annual meeting. Through the years, their

hospital administration and medical staff have demonstrated generous commitment to continuing medical education by their sponsorship and cordial welcome to participants and guests.

The meeting format has evolved and at present includes 8 to 10 scientific papers and a formal clinical vignette competition featuring a presentation by each local hospital. In addition, an unlimited number of poster presentations are available, allowing all area resident physicians a chance to participate in the meeting. Poster papers are divided between clinical research and vignette posters. In 1999, there were 25 scientific and 70 vignette posters.

17th annual meeting and beyond

The meeting also has continued to present a distinguished guest lecturer to speak on a topic pertinent to the group. This year's speaker was Walter McDonald, M.D., FACP, executive director of the College. His topic was "The Future of Internal Medicine." This issue of the *Maryland Medical Journal* includes the text of his remarks.

The Maryland Chapter also presents at this meeting the C. Lockard Conley Award for contributions to Resident Physician Education and Research. The award was named after Dr. Conley in recognition of his multiple contributions to medicine education and research. He is a renowned clinician and teacher who is a Master of the College and a past recipient of the national ACP Distinguished Teacher Award.

The meeting concludes with a reception at which the winning presentations in each category are honored. Those winning the contest for the best scientific paper and best clinical vignette are awarded an expense paid trip to the next annual ACP meeting, where their papers are placed in competition for national prizes.

Throughout the year, both residents and area faculty members meet periodically to make arrangements for the next meeting, as well as to discuss ways in which medical education and research may be advanced. Largely through the efforts of Richard Williams, M.D., FACP, and the staff of Harbor Hospital, area residents have begun to participate in an afternoon competition known as Medical Jeopardy. This event, an academic contest for resident physicians, was started 10 years ago by Philip Altus, M.D., FACP, and his colleagues in Miami, Florida. These contests now take place in over seven states and in Canada. Five years ago, under the title of Chief Residents Association of Baltimore (CRAB), the residents organized a conference on planning and expectation after residency, planned a family day for Olympic games and fun this fall, and made an annual charitable donation to Health Care for the Homeless of Maryland.

Associate members of the College have been a continuing strong element in the national scene. They now number over 25,000 of 117,000 College members. Their presence is apparent at the national annual meeting in the form of research and vignette presentations. In the year 2000, "An Associates Caucus," to be held by the national Associates leadership, will be initiated for the first time replacing the "Brown Bag" Lunch. This caucus will be the focus for discussion of regional as well as national medical issues.

In Maryland, the Associates have become an energetic, inquisitive and vital part of ACP educational efforts. A resident of Franklin Square Hospital Center, Dr. Ralph Woodward, developed a computerized "bulletin board' for resident information. This concept was adopted by the ACP, christened as "Resnet," and served as the seed for the ACP coming online with an ACP web sight. Additionally, the ACP gave one of the earlier Evergreen Awards to the Maryland Chapter in recognition of the effective development of the educational program for Associates. The Maryland Chapter plans to continue its free standing residents' meeting. Ten other similar associates programs are held throughout the country. In 45 other areas associate activities are included in their annual chapter meetings. We invite all Maryland physicians to attend and to encourage resident physicians' participation in our annual meeting.

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Speak Out

The future of medicine

Walter J. McDonald, M.D., FACP

Dr. McDonald is executive vice president and chief executive officer, American College of Physicians-American Society of Internal Medicine.

" I have seen the future — and it was being repaired." (CARTOON CAPTION)

" I have seen the future and it does not work." (PHILIP TOYNBEE)

"The future is not what it was." (ANONYMOUS)

Abstract

Speculation about the future of medicine is risky. Few would have predicted five years ago the sweeping changes that have occurred. Nonetheless, an analysis and projection of current trends would suggest that further substantial changes await us. These include, among other things, a return of double-digit inflation in health care, an increase in governmental oversight, an opportunity for both patients and physicians to reestablish their influence, a strain upon traditional medical ethics, and no resolution to the issues involving the uninsured. Taken together, these projections suggest a real need for physicians to be involved in helping to assure that those positive developments come to pass and that those unfavorable do not.

Everyone has an opinion about the future and most of such opinions are gloomy. Most in medicine have opinions about the future of medicine and while many are gloomy, most observers would admit that to have predicted what exists today from the vantage point of just five years ago would have been impossible. Similarly, to look even five years into the future of medicine is a difficult task.

Nonetheless, as executive vice president and chief executive officer of the American College of Physicians- American Society of Internal Medicine, I am required to prognosticate every year so that the College is as close to the "cutting edge" as possible. To assist in this task, members

of the staff sift through thousands of primary sources in an attempt to make these prognostications as evidenced-based as possible. Much of what I will say in these few pages is gleaned from the 200-page document, which was the result of these efforts this year. What I will do is look at how events will evolve. We must remember that they are not immutable.

The boundaries of this discussion are as follows: they are limited to trying to forecast what will happen between now and the year 2005; the topics are limited to 1) the structure of the health care system, 2) the delivery of health care, and 3) the business of medicine.

The structure of the health care system

Continued change. While the health care system will continue to evolve in the direction of further integration, the pace of that evolution will slow. This slowdown will be fueled, in part, by some spectacular failures such as that recently evidenced by Pennsylvania's Allegheny Health. The 1990's practice, which some health care systems employed, of paying up to $250,000 per doctor to buy up practices has simply not paid adequate dividends. Millions of dollars in losses in primary care networks have stunned health systems administrators, who are now seeking ways to unload physician practices, institute productivity measures, and restructure contracts. The concept of vertical integration, borrowed from non-health care industries, may be fundamentally flawed as it pertains to the health care industries. What does appear to be emerging is the concept of virtual integration where cooperation among physician groups, hospitals and health plans is achieved through contractual relations rather than ownership.[1]

As evidence that there is a significant trend toward diminished numbers of acquisitions and corporate mergers, the number of hospitals involved in such dealmaking dropped 18% in 1997, compared to the previous year.[2]

Although the pace will slow, the rate of consolidation will continue. It must with only 60% of the hospital beds in this country filled and the pressures to produce operational efficiencies and economies of scale to compete for contracts.

Financial woes. In mature managed care markets, managed care organizations will struggle to remain economically viable despite growth in membership. Competition with its attendant cost and pricing pressures will lead to losses that will again bring pressure to bear upon the cost of health care. Last year saw United Health Care take a $900 million restructuring charge related to job cuts and lack of profitability in several of its Medicare HMO plans.[3] A number of other health plans reported substantial losses.[4,5] The end result is that the premiums for health care will again rise toward double digit increases. In Medicare markets, a number of managed care programs will announce that they will no longer participate.

Governmental oversight. The federal and state governments will play an increasingly important role in the oversight, control, and development of managed care and publicly financed programs. At the federal level, the summer of 1999 saw the debate over the Republican and Democratic version of the Patient Protection Act as both parties struggled to demonstrate that they were more responsive to patients' concerns.

Activity is certainly not limited to the federal government. During the 1995 to 1996 legislative sessions, state lawmakers introduced more than 1,000 bills related to managed care. These bills banned gag clauses, permitted women direct access to OB-GYN physicians, and provided for due process among other things.[6]

Physician-owned health care organizations. Physician-owned health care organizations will become more prevalent. Despite the need for substantial capital investment, these organizations will be seen as a friendly alternative in a health insurance climate that will be seen as increasingly hostile to physicians. This is reflected in an American College of Physicians survey conducted in early 1998. Forty-eight percent of respondents believed that physician-owned or -directed managed care organizations do a better job promoting patients' best interests than other managed care organizations.[7]

The delivery of health care

Patients. As systems consolidate they will tend to become more impersonal. Despite this occurrence and the fact that patients may have less choice in their selection of physicians and the content of their care, patients will exert their influence in a competitive market through patient satisfaction surveys. One recent survey showed that 100% of managed care organizations either do now or plan to track patient satisfaction and that half will discontinue poorly performing providers who do not improve their performance after an initial warning.[8] The Community Tracking Study surveyed 43,771 persons and 9,264 physicians of whom 5,160 were primary care physicians. In this 1996 to 1997 survey, 23% of responding physicians stated that their compensation was determined in part by patient satisfaction surveys.[9] Physicians will need to maintain and hone their skills in this venue if they are to survive. In 1997, among those seniors enrolled in Medicare, there was a disenrollment rate of approximately 20%. The General Accounting Office reported that their analysis showed that the primary reasons for this high rate was patient dissatisfaction over quality and access.

New technologies. New technologies, especially the Internet, will provide patients, as well as their employers and insurers, with increased access to high quality, low quality, and outright false medical information. A number of Internet sites currently offer such information. More than one-third of all Internet users regularly use the Internet to access health care information.[10] Most users state that they would like to have more information direct from their physician's office. Unfortunately, most patients lack the ability to sort out the good from the bad information. This will have to be borne in mind in dealing with our patients in the future

Physicians. Increasing numbers of physicians will work within large systems of care as employees, subcontractors, administrators, or in some combination. In 1994, 43% of physicians surveyed by the American Medical Association were employees in a group practice, hospital, medical school, or other health care facility.[11] This represented a near doubling of the percentage over the prior decade. These trends were most striking among young physicians.

Physicians will not gain control of decision-making prerogatives that have been eroded by managed care organizations, employers, legislative bodies, and the peer review process. Plans now deter-

mine most of the modalities of treatment available, ambulatory services, consultations, and inpatient care. Physicians will have greatly reduced power to protect their interests and those of their patients.[12]

Specialists in inpatient care will gain an ever increasingly important role in the care of the inpatient. While these physicians will initially be seen as a threat to the primary care physician, they will ultimately be well accepted, as primary care physicians concentrate on busy and increasingly complicated outpatient services.[13] Hospitalists will seek to establish that they are more cost effective, have better outcomes, and are well accepted by patients.

Patients will more frequently make health care choices that reflect a wish for palliative care rather than more aggressive therapies such as surgery or chemotherapy. Medical schools will highlight the importance of palliative care and physicians will develop greater expertise in pain management, communication, and treatment of distressing symptoms associated with terminal illness.[14]

The physician's time will become an increasingly scarce resource as more elements are added to the clinical encounter (e.g., documentation requirements, advanced directives, etc.) and the demands for "efficiency" increase. In 1995, 41% of physicians stated that the amount of time they spent with their patients had decreased during the previous three years.[15] Both patients and their physicians will grow increasingly dissatisfied over this development. Given the confirmed relationship between the length of the encounter and quality of care, the move toward less time for the clinical encounter could have serious consequences.

Physicians will have to make decisions based on a balance between the principles of population-based care and maximizing benefits for the individual. A panel of the American Association of Medical Colleges defined population health as the " ability to assess the health needs of a specific population; implement and evaluate interventions to improve the health of that population; and provide care for individual patients in the context of the culture, health status and health needs of the populations of which the patient is a member."[16] Previously, a physician's primary responsibility was to do everything possible for the patient who visited the office. In the future, to an even greater extent than it is today, many physicians will be responsible for a group of patients and for a budget that needs to be managed wisely. This tension between the need to provide care to a group of patients and the individual patient will have to be addressed.

As quality is more clearly defined and measured, the physician will be required to provide data that will be used to manage and monitor practice. Physician performance will be subject to close scrutiny and measurement. There will be an even greater premium placed on detailed credentialing in the form of certification, recertification, and certificates of additional competence. The call for quality will continue to crescendo and a single, nationally standardized source of information on physician quality will emerge. Even now physician compensation is being adjusted according to measures of physician performance. According to data collected in the Community Tracking Study, 23% of physicians report that patient satisfaction surveys are used as part of the formula to determine their compensation. In like manner, 18% report the use of quality measures such as preventive care services, and 16% report the use of practice profiles that scrutinize the use of medical resources.[9]

The use of alternative medicine such as chiropractic, homeopathy, and herbal medicine will con-

tinue to be popular with our patients. Currently, it is estimated that 80% of the world's population employs some form of alternative medicine. The average American is as likely as not to use some form of alternative medicine.[17] Not only do 50% of our patients use it, but only 50% of our patients tell us about it.[18] If so many resources are to be used for these modalities, we must insist upon controlled trials exploring their efficacy and safety. We must, moreover, learn to ask our patients probing questions about their use and above all must learn more about them.

The business of medicine

Disease management. Patients with specific conditions will increasingly be referred and treated in subcapitated networks subcontracting directly with existing health plans. This will be part of an effort to reduce costs and will be successful, leading to a proliferation of these disease management programs. The motivation will not be entirely financial, as it will also be part of the quality movement that is beginning to emerge in this country. Eventually, outcomes research will show that this approach of preventing disease or managing it aggressively will result in long-term cost savings. The Lovelace Health System is synonymous with disease management. Their disease management program is mature enough to give us a look into the future. Examples of the outcomes that they have achieved from among their 17 disease management programs include a vaginal birth rate after cesarean section of over 58%, a greater than 50% reduction in neonatal intensive care admissions, a 20% reduction in the length of stay for patients with congestive heart failure, a $125,000 reduction in the cost of the anticoagulation program, and an average reduction in diabetic glycohemoglobin levels from 12.2% to 9.9%.[19] Disease management programs will proliferate for many of the right reasons.

Goals of participants in the system. The goals of other participants in the health care system — payers, insurers, non-physician providers, the government, and even our patients — may differ somewhat from the goals of physicians. The ensuing conflict will test the professionalism of physicians.

Medical ethics and medical economics are on a collision course. While health maintenance organizations and integrated provider groups are offering financial incentives for providing fewer services, most ethicists and physicians still believe that bedside rationing is not ethical or should not result from the application of financial incentives.[20] This is but one obvious example of how the goals of the participants in this system are diverging.

It must remain paramount that physicians continue to promote their patients' welfare in this increasingly complex system. The obligations to the individual patient remain foremost. The obligation that we have to society is the new element and one with which we must learn to deal.[21]

Health maintenance organizations. The cost of health care is beginning to rise again with some premium increases rising into double digits. Health care purchasers will look for ways to decrease costs and will form consortia that will bypass managed care organizations and will begin to contract directly with physicians or physician-owned organizations. This change has already occurred in Minneapolis-St. Paul where 25 large corporations have begun to buy health care from competing groups of physician instead of traditional health maintenance organization. These developments will

create unique opportunities for physician leaders to again take a commanding role in shaping the health care system.

The uninsured. The United States will not achieve universal health coverage for many years to come. The number of uninsured will continue to grow. Children, immigrants, and minorities will be particularly vulnerable. Employer-based insurance will become less common as the employee contribution continues to rise and fewer employees opt to accept it. Despite a booming economy, we will find this problem difficult to resolve.

Summary

It is obviously a challenge to look into the future with a high degree of accuracy. This attempt paints a somewhat gloomy picture and perhaps overly so. It is, however, based on an analysis of trends projected out over the next five years.

There are several very positive notes on which to end. First, a 1997 survey by the American College of Physicians-American Society of Internal Medicine showed that of over 750 physicians, an increasing number of physicians are again satisfied with their chosen career. This represents a substantial increase over the satisfaction rate of the early 1990s.

Second, the trends are not immutable. The conclusions reached are based on the assumption that the forces leading to these trends will not change. Recognition of the trends leads to the possibility of altering those forces and changing the outcomes.

"Enough, if something from our hands have power
To live, and act, and serve the future hour;"

— WILLIAM WORDSWORTH

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Speak Out

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Sexual practices of older adults in a high HIV prevalence environment

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ABSTRACT: *Based on recent epidemiologic evidence, AIDS in older persons (ages 55–79) in Maryland appears to be increasingly contracted heterosexually, particularly in women. Little is known about sexual practices or beliefs about HIV in older persons living in high HIV prevalence urban populations. The purpose of this study was to assess sexual practices, particularly high risk behavior, modifications of behavior including condom use, and perceptions of risk.*

A behavioral survey, containing 41 potential responses, was developed through modification of The National AIDS Behavioral Survey, focusing on heterosexual activity. The survey was administered to a convenience sample of 55 to 79 year olds attending the Union Memorial Hospital medical clinic.

Sexual activity is common within the older population, especially among men. Multiple partners is not unusual in older men. Condoms are commonly used. Older individuals typically are aware of HIV heterosexual transmission risk and a proportion have modified sexual behavior because of perceived risks.

Throughout the first twenty years of the AIDS epidemic in the United States, prevention efforts have focused on risk-taking characteristics of younger people. While 10% of all AIDS patients have been 50 years of age or older, and

TABLE 1. Sexual activity among males and females by age

	AGE OF GROUP				
	55-59	60-65	66-79	Total	P Value
Male					
Not sexually active	6 (23%)	8 (29%)	10 (42%)	24 (31%)	
Sexually active	20 (77%)	20 (71%)	14 (58%)	54 (69%)	
Total	26 (100%)	28 (100%)	24 (100%)	78(100%)	.160
Female					
Not sexually active	22 (60%)	28 (66%)	33 (76%)	83 (68%)	
Sexually active	15 (40%)	14 (34%)	10 (24%)	39 (32%)	
Total	37 (100%)	42 (100%)	43 (100%)	122(100%)	.098

approximately 3% have been 60 years or older, there has been little focus on the risk behaviors of older adults.[1]

Early in the epidemic, the group most affected by transfusion-related HIV transmission was the elderly.[1,2] Since the advent of universal HIV antibody testing by blood banks in 1985, transfusion-related AIDS cases have declined dramatically in the elderly, yet new AIDS cases have remained stable in this group.[3]

As AIDS cases due to transfusions have decreased, those due to heterosexual transmission have risen substantially. In Maryland, heterosexual cases among elderly (>60 years of age) have grown from 6% of AIDS cases in 1986 to 29% in 1998.[4] Similarly, the proportion of cases that are classified as "no identified risk"(NIR) among the elderly increased from 12% to 38% from 1986 to 1998. Many cases classified as NIR are likely to be heterosexual in transmission because of the CDC surveillance policy of classifying cases as heterosexually transmitted only when one of the partners is known to be at high risk for HIV seropositivity. If the only "risk" is multiple heterosexual partners, none of whom fall into a high HIV risk profile, the case is classified as an NIR case. Considering other risk behaviors are uncommon in these age groups, it appears that heterosexual transmission is playing an even greater role in HIV transmission among the elderly than in younger adults. Little is known about sexual practices of the elderly, including behaviors that put them at risk for acquiring HIV and preventive actions they may take to reduce their risk.

The objective of this study was to examine sexual practices among older individuals living in an urban area, including the level of sexual activity, the prevalence of multiple partners, and the frequency of condom use. Additionally, we intended to explore whether there was more risk cognizance and AIDS awareness among these patients than has been commonly appreciated. Finally, we wanted to examine the extent to which patients have modified their sexual practices due to the risk of HIV/AIDS.

Methods

The adult medicine clinic at the Union Memorial Hospital in Baltimore, Maryland, was the site of this survey. The survey instrument was adapted from the National AIDS Behavioral Survey.[5] All persons visiting the clinic for initial medical evaluation or follow-ups who were 55 to 79 years of age were eligible. The study was conducted in the medical clinic under strict confidential guidelines. A written consent was obtained from each subject. The subjects that agreed to participate were taken to a private room in the clinic and asked to complete the questionnaire independently. The administrator of the survey was available to answer basic questions, but was trained not to interject bias. In the case of functional illiteracy, decreased visual acuity, or any other circumstance where assistance was needed to complete the survey, the administrator read out each of the questions to the participants. Upon completing the survey, the participant placed it in a sealed envelope. Each participant received a $5 honorarium.

Survey instrument. The 41-item survey focused on the assessment of sexual activity, condom use, level of perceived individual risk, knowledge about HIV/AIDS, and modification of sexual practices because of HIV/AIDS. Standard demographic measures were obtained, which included the subjects age, race, education, current marital status, sexual orientation, intravenous drug use, rating of overall health, and physical limits on sexual activity.

Sexually active respondents were those who reported having vaginal, anal, or oral sex in the last year. To determine an accurate rate of condom use, we considered those who responded with either "never" or "rarely" as *non-users* of condoms. Only those responding with the alternative answers of "half the time," "most of the time," or "always" were considered condom *users*.

The level of perceived risk was assessed with the following question: "What are your chances of getting infected with HIV/

AIDS?" To ascertain the level of knowledge about HIV and AIDS among the older adults in the sample, respondents were presented with three statements presenting commonly mistaken beliefs about the type of people who are at risk for AIDS. The first statement indicated that only gay men or people who inject drugs are at risk for HIV/AIDS; the second statement indicated that heterosexuals don't need to worry about getting HIV/AIDS from sex; the third statement indicated that only young people are at risk for AIDS. Disagreements with these statements would presumably indicate the respondents were informed of HIV transmission risks; on the other hand, agreement with these statements would indicate that respondents were falling victim to common myths about "risk groups."[5] Patients were also asked whether they had changed their sexual practices in the last five years because of the risk of HIV/AIDS. Those who answered "yes" were asked to describe the type of change they made.

TABLE 2. Sexually active males and females with single and multiple partners by age

	AGE OF GROUP				
	55-59	60-65	66-79	Total	P Value
Male					
Single partner	14 (70%)	15 (75%)	9 (64%)	38 (70%)	
Multiple partners	6 (30%)	5 (25%)	5 (36%)	16 (30%)	
Total	20 (100%)	20 (100%)	14 (100%)	54(100%)	.770
Female					
Single partner	14 (93%)	13 (93%)	10 (100%)	37 (95%)	
Multiple partners	1 (7%)	1 (7%)	0 (0%)	2 (5%)	
Total	15 (100%)	14 (100%)	10 (100%)	39(100%)	.500

Statistical analysis. The sample was divided into tertiles, resulting in three, approximately equal-size age groups. The first tertile ranged in age from 55-59, comprising 31.5% of the sample; the second tertile ranged in age from 60 to 65, comprising 35% of the sample; and the third tertile range in age from 66 to 79, comprising 33.5% of the sample. The effect of age on sexual activity and multiple partners was analyzed using the Chi-Square test for trend. All analyses were conducted with the personal computer version of SAS statistical software.[6]

Results

Sample. The number of surveys collected during the study period was 200; 122 women (61%) and 78 men (39%). Survey respondents ranged in age from 55 to 79, with a mean age of 63.4 years. The ethnic distribution of the sample was 82.0% African-American, 17.0% Caucasian, and 1.5% other. One-fourth of respondents were married or living with a partner (26.0%); another one-fourth were separated or divorced (24.5%); almost one-third were widowed (31.5%); and 18.0% were single. In education, over half of the sample (58.5%) had not graduated from high school; 27.0% were high school graduates; and the remaining 14.0% had received some college education, or were college graduates. Ninety-six percent of the respondents described themselves as heterosexual, 3.0% as homosexual, and 1.0% as bisexual.

Sexual activity. Of the 200 survey respondents, 93 (47.0%) reported being sexually active in the last year. Of the sexually active respondents, 92.4% had engaged in either vaginal intercourse or both vaginal and oral sex in the last year. The remainder had only oral (4.3%), anal (2.2%), or anal and oral (1.1%) sex in the last year. Men were significantly more sexually active than women (69% compared to 32%, respectively, $p<.001$).

Sexual activity among males and females by age group is shown in **Table 1**. In the 55 to 59 age group, 76.9% of men were sexually active compared to 71.4% in the 60 to 65 age group, and 58.3% in the 66 to 79 year age group. Sexual activity among females was 40.5% in the youngest tertile, 33.3% in the middle tertile, and 23.3% in the oldest tertile. When analyzed separately for males and females, neither of the percentage declines in sexual activity was statistically significant.

Number of partners. Of the 93 respondents that were sexually active in the last year, 75 (81%) reported having one partner only, and the remaining 18 (19%) disclosed having multiple partners in the last year. The median number of partners was 2.5. Men were more likely to have had multiple partners than women (29.6% compared to 5.1%, $p<.003$). Among men, age did not appear to be a barrier to having multiple partners (**Table 2**). Thirty percent of the men in the youngest age group had multiple partners compared to 25.0% in the middle age group,

and 35.7% in the oldest age group. Only two women had multiple partners in the last year.

Condom use. Condoms were used at least half the time by over one-third (37%) of the sexually active respondents. When condom use was examined separately for men and women, the findings were similar; 35% of men and 38% of women reported condom use by male partners at least half the time.

AIDS awareness. In response to the question about perceived risk, only three sexually active males (5.6%) rated themselves at medium or high risk for HIV or AIDS. No sexually active women rated themselves at medium or high risk. Twenty sexually active males (37%) rated themselves at low risk for HIV/AIDS compared to 9 females (23.1%). The majority of males (57.4%) and females (76.9%) did not consider themselves at risk for AIDS at all.

In response to the questions on AIDS awareness, 71% of the respondents disagreed that only gay men or people who inject drugs get HIV/AIDS. Women were significantly more accurate than men on this item (82.1% versus 63.0%, $p<.05$). In response to the second question, three quarters of the respondents disagreed with the statement that heterosexual people don't need to worry about getting HIV/AIDS from sex. On this item, women again appeared to be more knowledgeable than men but this difference was not statistically significant. Finally, most of respondents in the sample (95% of women and 82% of men) disagreed that only young people are at risk for AIDS.

Changing sexual practices in response to HIV. Twenty-eight respondents from the entire sample (14%) said that they had changed their sexual practices in the last five years specifically due to the risk of HIV/AIDS. Of those who reported changing their practices, 10 respondents (35.7%) started using condoms or began to use condoms more often, 8 respondents (28.6%) stopped having sex altogether, and another 9 (32.1%) decided to have only one partner or said they avoided certain sexual partners.

Discussion

Reports on sexual activity in older adults vary depending on the survey circumstances and location. In a large household study, 74% of persons over 60 and 44% over 70 were sexually active.[7] However, this report included only 65 respondents older than 60. In a survey of older adults in a rural senior center housing and meal program,[8] 20% of persons over 60 responded they were sexually active, with slightly over 15% admitting multiple partners. Others have reported much higher numbers. A longitudinal study of Pfeiffer showed that at age 63 about 70% of men were still sexually active[9] compared to 25% of men at age 78.

In our current survey, 32% of female respondents 55 or older and 23% of those 66 or older reported active sexual behavior. Sixty-nine percent of men reported sexual activity, including 58% in the oldest age group. Thus men were twice as likely overall to be sexually active than women. Men were also much more likely to acknowledge multiple sexual partners than women; only two female respondents acknowledged multiple partners in the last year. Advancing age in our male group did not decrease the likelihood of maintaining multiple sexual relationships.

Reports have indicated that condom use is rare among older adults.[5,9,10] In our study, 38% of sexually active women and 35% of sexually active men admitted to using condoms "half of the time," "most of the time," or "always" within the last year. Furthermore, 28 of our 200 respondents changed their sexual practices in recent years because of the concerns about the risk of contracting AIDS. These changes included initiating condom use for the first time, using condoms more often, or choosing to have a monogamous relationship over multiple partners. These changes in behavior, along with the responses on the AIDS awareness questions, appear to indicate a significant level of knowledge about HIV transmission risk in older persons who are sexually active. However, when asked individually if any of the respondents considered themselves at risk, most of them felt at little or no risk for HIV/AIDS.

Study limitations. This was a convenience sample recruited from one inner city clinic and does not necessarily reflect attitudes or behavior of other persons in different settings. Additionally, one must always question the candor of survey respondents, particularly regarding subjects of such high sensitivity. The impression of those who administered the survey was that we received a high degree of candor among our respondents, largely due to the excellent relationship between our clinic patients and the staff.

Conclusions

This survey demonstrated that there is a substantial level of sexual activity in older persons who attended our urban medical clinic, particularly among men. Multiple partners are not unusual with men well into their 60s and 70s. Condom use is common. The knowledge level of HIV transmission risk as manifested by changes in behavior and correct responses on the questionnaire seems high, suggesting that we may underestimate the knowledge of older citizens about AIDS. We believe that older persons should be included in educational programs targeted at reducing HIV infection and expect that such pro-

grams would be of great interest to them and well received based on their responses to this survey.

Acknowledgment

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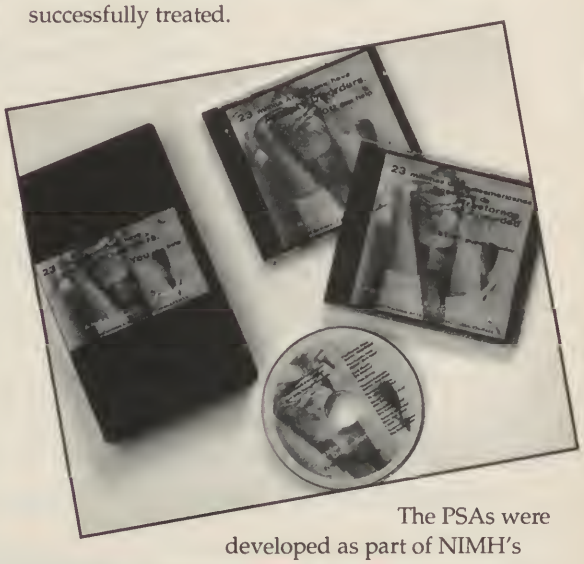
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National Institute of Mental Health

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A case of post-streptococcal reactive arthritis

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ABSTRACT: *Reactive arthritis is a term used to describe a sterile inflammatory arthritis occurring after a documented infection elsewhere in the body. Group A streptococcus is known to cause such an arthropathy in the setting of acute rheumatic fever. Friedberg first postulated that a reactive arthritis might occur in response to a streptococcal pharyngeal infection as a separate entity from rheumatic fever in the 1950s. Then, in the 1980s, other investigators began describing cases of reactive arthritis that were not characteristic of acute rheumatic fever based on certain observations and application of criteria. We present a patient whose clinical features are more consistent with post-streptococcal reactive arthritis than acute rheumatic fever.*

Case report

A 46-year-old woman with a history of a benign systolic murmur was in her usual state of health until two weeks before admission. At that time she noted onset of a sore throat, malaise, and low-grade fevers. Four days before admission she experienced fever to 104°F, chills, nausea, vomiting, arthralgias, and myalgias. She then presented to the emergency department. On physical exam she appeared ill. Her temperature was 98.8°F, her pulse was 102, her respirations were 16, and her blood pressure was 100/70 mm Hg. Her head and neck exam revealed mild pharyngeal erythema without exudate and shoddy anterior cervical lymphadenopathy. A non-radiating 2/6 systolic murmur was heard on chest auscultation and mild diffuse tenderness was noted on abdominal exam.



Figure 1. MRI of left knee and calf.

Joint exam revealed no swelling, erythema, or warmth of any peripheral joints. No rashes or other cutaneous abnormalities were observed.

Her laboratory values were as follows: hematocrit, 25.1% and white blood cell count, 14.2 cells/mm^3 with 51% bands. Blood urea nitrogen was 31 mg/dL, creatinine 3.1 mg/dL, C3 – 145 mg/dL (normal), C4 – 50 mg/dL (normal). Total bilirubin was 3.5 mg/dL, alkaline phosphatase 209 U/L, AST 52 U/L, and amylase 40 U/L. ESR: 128 mm/hr. ASO titer – 250 Todd units. Her throat culture was negative. Urinalysis: 4+ protein; white blood cells and red blood cells were too numerous to count. No casts were identified. Chest x-ray was normal. EKG revealed sinus tachycardia with left atrial enlargement.

The patient was admitted to the hospital with a presumptive diagnosis of urinary tract infection and acute renal failure. Intravenous antibiotics were started. On hospital day two, urine and blood cultures grew beta-hemolytic streptococcus that was identified as a penicillin-sensitive Group A Streptococcus. Endocarditis was also considered, but felt to be unlikely based on the absence of vegitations on echocardiogram. Although the patient began to feel markedly better by hospital day two, her renal function continued to deteriorate with a peak creatinine level of 8.0 mg/dL on hospital day five. Her renal function improved just as rapidly however, and by hospital discharge her creatinine had returned to normal. Also complicating her course was the development of mild pancreatitis and cholangitis that resolved with intravenous hydration, bowel rest, and antibiotics. Repeat blood and urine cultures on hospital day four remained negative.



Figure 2. MRI of left knee and calf.

She continued to improve until hospital day eleven, at which time she complained of bilateral knee pain and swelling. Large warm effusions of both knees were noted on physical exam, as was a firm 6 cm mass in the proximal left calf. Deep venous thrombosis was ruled out by venous plethysmography. A magnetic resonance imaging (MRI) scan of the left calf was done (**Figures 1 and 2**). A 10 x 8 x 5 cm cystic mass was noted in the posterior medial aspect of the left calf extending to the knee joint where an effusion was noted. Aspiration of the left knee revealed sterile inflammatory effusions with 7,000 WBC/mm^3 and 4,500 RBC/mm^3; aspiration of the left calf mass and right knee revealed similar findings. Fluid cultures remained negative.

Because of the patient's recent renal failure and low hematocrit, her arthritis was treated with low dose prednisone rather than anti-inflammatory medications. Intra-articular corticosteriod injections were considered but rejected at this time because of lingering concern that her arthritis represented resolving septic arthritis. She was discharged to home, but on return to clinic one week later her arthritis had not improved. Both knees were reaspirated and fluid analysis was again consistent with an inflammatory process; cultures remained negative. The patient's knees were subsequently injected with 40 mg each of triamcinolone and additional blood work was obtained. An HLA-B27 antigen, rheumatoid factor, and ANA all returned negative. At follow-up a few weeks later her arthritis had completely resolved. At further follow-up, one and three months later, the arthritis had not recurred.

Discussion

Probably the best known example of a reactive arthritis is Reiter's syndrome, the arthritis associated with bacterial dysentery caused by Shigella, Salmonella, and other enteric strains that occur in HLA-B27 positive persons.[1] The inflammatory reaction in the joints is believed to be due to immune complex deposition in, rather than direct infection of, the joints. Similarly, Group A Streptococcus has been associated with an acute arthritis in the setting of acute rheumatic fever (ARF).[2] Friedberg first suggested that a reactive arthritis might also occur as a response to a streptococcal pharyngeal infection as a separate entity from ARF in 1959.[3] Over twenty years later, other investigators began to compile similar evidence.[1,4-7] These patients were believed to represent an entity distinct from ARF based on the following observations:

1. They had no evidence of carditis.
2. The latent period between the antecedent streptococcal infection and the arthritis was usually shorter (1 to 2 weeks) than the 3 to 4 weeks usually seen with ARF.
3. The arthritis was more severe and prolonged and usually resistant to treatment with anti-inflammatory agents such as aspirin or NSAIDs. This was in contrast to the fleeting, migratory, arthritis typically observed with ARF, which responds readily to treatment with anti-inflammatory medications.
4. Some patients had accompanying post-streptococcal glomerulonephritis, which is rarely seen with ARF.

We present a patient whose clinical features are more consistent with post-streptococcal reactive arthritis than ARF. ARF typically attacks several joints in quick succession, each lasting only for a few days, resulting in the typical pattern of migratory polyarthritis. In contrast to this, but similar to the patients described above, our patient's arthritis was severe and persistent and unresponsive to low dose oral steroids. (Interestingly, her arthritis was further complicated by rupture of the synovial effusion into the calf, resulting in a Baker's [popliteal] cyst.) In addition, she lacked evidence of carditis and was diagnosed with post-streptococcal glomerulonephritis, a diagnosis rarely seen with ARF.

Other non-streptococcal causes of inflammatory arthritis are unlikely in this patient in light of her documented streptococcal sepsis. She had no antecedent rashes such as erythema chronicum migrans, making Lyme arthritis unlikely. Although systemic lupus causes arthritis and glomerulonephritis, her ANA was negative and her renal failure was atypical for lupus in that it reversed rapidly without immunosuppressives and was not associated with hypocomplementemia. Malignancy with arthritic involvement of the calf and knees is unlikely since tumors typically cause arthralgias rather than arthritis and the MRI of the leg did not disclose any evidence of sarcoma or bony tumor. Rheumatoid arthritis is unlikely because it usually begins in the small joints of the hands and feet, and the onset is usually more insidious. HLA-B27-associated reactive arthritis was ruled out with a negative B27 antigen.

In summary, the most satisfying diagnosis for this patient is streptococcal sepsis and pharyngitis with post-streptococcal reactive arthritis and glomerulonephritis. Although interesting from an academic point of view, the distinction between ARF and post-streptococcal reactive arthritis may have important therapeutic implications as well. While to date the studied patient population is small, there is evidence to suggest those with post-streptococcal reactive arthritis may not require antibiotic prophylaxis.[4]

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Hepatic hydrothorax: diagnosis and management. Case report and review of the literature

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ABSTRACT: *Current practice standards indicate the need for tube thoracostomy in the management of clinically significant recurrent pleural effusions. The following case presentation and review of the literature illustrate a contraindication to chest tube insertion with pleural effusions associated with portal hypertension (hepatic hydrothorax) and suggest alternative therapies.*

Hepatic hydrothorax (HH) is defined as a pleural effusion without a primary cardiac or pulmonary etiology that develops in the presence of cirrhosis and portal hypertension.[1] Peritoneal fluid tracks across the diaphragm and accumulates within the pleural space, often resulting in a symptomatic, persistent, and difficult to manage effusion. The following is a brief report of a typical case of HH, a review of the literature, and a proposed diagnostic and therapeutic algorithm.

Case report

A 75-year-old woman presented to a community hospital with new onset of shortness of breath and increasing abdominal girth. She had been in her usual state of health until a few days before presentation. A chest radiograph showed a large, right-sided pleural effusion. She denied any changes in mental status, lower extremity edema, or evidence of gastrointestinal hemorrhage. A therapeutic thoracentesis was performed with immediate improvement in her symptoms. The pleural fluid was a transudate. Her symptoms recurred within 24

hours. She was emergently intubated. Her Coumadin therapy was reversed with fresh frozen plasma and a chest tube was placed, which drained 3.5 to 5 liters of fluid per day. Within 36 hours of the tube thoracostomy the patient was extubated, but her chest tube continued to drain large volumes of transudative fluid. Diuretic therapy was instituted to reduce the rate of ascites formation. A biopsy of the liver was performed, which showed micronodular cirrhosis and steatohepatitis without Mallory bodies. A computed tomography (CT) scan of the abdomen revealed ascites, an irregular contour of the liver, and no evidence of pancreatitis or malignancy. She was transferred to this institution for further management.

The patient had a history of hypertension and atrial fibrillation. Her medications at home were amiodarone, metoprolol, lisinopril, and warfarin. She had no known drug allergies. She was married and worked as a homemaker. There was no family history of liver disease. She denied tobacco, alcohol, or illicit drug use. The patient had no risk factors for blood-borne diseases.

On transfer, the patient was a thin, acutely ill appearing elderly woman who appeared fatigued but was alert and oriented. She was afebrile with a respiratory rate of 20. Supine, her blood pressure and pulse were 100/54 mm Hg and 85, respectively. Sitting upright, her blood pressure decreased to 80/40 mm Hg, while her pulse increased to 112. Her mucous membranes were dry and her jugular venous pressure was estimated to be less than 5 cm H_2O. The chest was clear to auscultation bilaterally, and a chest tube was inserted into the right fifth intercostal space. Her cardiac exam revealed an irregularly irregular rhythm. No murmurs, nibs, or gallops were appreciated. Her abdomen was mildly tender in the midepigastrum without rebound or guarding. The liver span was 10 cm in the right midclavicular line. The spleen tip was not palpable. There was no abdominal distention, bulging flanks, fluid wave, or shifting dullness. She had normoactive bowel sounds. Her stool was guaiac negative. Her extremities had no cyanosis, clubbing, or edema. There was marked skin tenting and xerosis, but no spider angiomas, palmar erythema, or jaundice. She was alert and oriented and her neurologic exam was nonfocal. There was no asterixis.

Her laboratory values were as follows: white blood cell count 15,000 /uL, hematocrit 40%, and platelet count 100 x 10^3 /uL. Sodium was 129 mEq/L, potassium 5.4 mEq/L, chloride 102 mEq/L, bicarbonate 22 mEq/L, blood urea nitrogen 29 mg/dL, creatinine 0.9 mg/dL. Prothrombin time was 18.1 seconds, and a partial thromboplastin time was 69 seconds. AST was 65 U/L, ALT 42 U/L, alkaline phospatase 328 U/L, and total bilirubin 0.8 mg/dL. Albumin was 2.1 g/dL and total protein was 5.3 g/dL. Hepatitis B and C serologies were negative. Alpha-1 antitrypsin level was normal. Anti-nuclear and anti-smooth muscle antibodies were not detected in the serum. A CT scan of the chest showed a large, right-sided pleural effusion, but no lung masses or hilar adenopathy.

During her hospitalization, the chest tube continued to drain 3 to 5 liters per day. A transjugular intrahepatic portosystemic shunt (TIPS) was placed. The portosystemic gradient was 26 mm Hg (portal vein pressure minus hepatic vein pressure) before TIPS placement and 4 mm Hg after TIPS placement (a portosystemic gradient greater than 5 mm Hg is diagnostic of portal hypertension). The TIPS thrombosed within 24 hours and was revised but thrombosed again. The albumin level decreased to 1.7 mg/dL from 2.1 mg/dL in the course of one week, and she became hemodynamically unstable. She was transferred to the intensive care unit, where after ten days she expired from intravascular collapse.

Discussion

Hepatic hydrothorax is diagnosed in a patient with known liver disease as either an incidental finding or as a symptomatic complication. This case illustrates a situation in which the pleural effusion was the presenting manifestation of cirrhosis. Further complicating the diagnosis is the fact that the patient was on oral anticoagulation. This therapy masked her underlying coagulopathy, which most certainly would have prompted an earlier evaluation. The aminotransaminases and alkaline phosphatase were abnormal, but she did not have an elevated bilirubin. These factors, as well as the lack of clinically significant ascites, made the diagnosis of cirrhosis difficult.

Pleural effusions in association with cirrhosis were first described by Laennec in the nineteenth century. There have been many theories since that time regarding the pathogenesis of these effusions. The most plausible and widely accepted explanation is that the ascites travel through diaphragmatic defects known as Lieberman's holes. The negative intrathoracic pressure draws the ascites into the pleural cavity. If the volume of ascites production is low, thoracic lymphatics can reabsorb the fluid before a clinically significant effusion occurs. When the rate of ascitic fluid production exceeds the rate of drainage of the pleural lymphatics, a persistent effusion develops and progressively enlarges.[2]

It has been reported that HH makes up 2% of all diagnosed pleural effusions,[3] and that 6% of all cirrhotic patients will develop this type of effusion at some point in the course of their disease.[2] HH is most commonly a right-sided pleural effusion (67%), but can also present as an isolated left-sided effusion (17%), or bilaterally (17%).[4] HH, although uncommon, is by no means a rare complication of cirrhosis. All patients with recur-

rent pleural effusions should be screened for cirrhosis before a tube thoracostomy is performed.

The initial screening should include a history, evaluating for a history of liver disease or liver enzyme abnormalities, risk factors for blood born diseases (i.e,. intravenous or intranasal drug use, tattoos, acupuncture, body piercing, or occupational needlesticks), alcohol abuse, and symptoms or signs of ascites, gastrointestinal hemorrhage, or hepatic encephalopathy. Hepatotoxic drug use (i.e., amiodarone, methotrexate, vitamin A) should also be considered as a potential risk factor for the development of liver disease. A family history of liver disease must be excluded. Close attention should be paid to physical findings suggestive of hepatic disease and portal hypertension, such as spider angiomas, palmar erythema, jaundice, peripheral edema, ascites, splenomegaly, and asterixis. Laboratory studies should be reviewed before treatment with careful attention paid to the aminotransaminases, prothrombin time, total bilirubin, and albumin levels. Thrombocytopenia may be indicative of portal hypertension with splenomegaly and hypersplenism. If the history, physical examination, or laboratory values raise suspicion for liver disease, an appropriate evaluation for HH and cirrhosis should be undertaken.

The radiologic literature has advocated the use of diagnostic radionuclide ascites scan (DRAS) to diagnose HH.[5] This procedure involves the instillation of Tc-99m macroaggregated serum albumin into the peritoneum. Serial radiological scans can then determine if the tracer tracks across the diaphragm. In patients with little or no ascites, CT guidance can be used to instill the radiotracer.[5] To date, DRAS is the definitive diagnostic test for differentiating HH from other causes of pleural effusion. A DRAS was not performed in our patient because a transudative pleural effusion, which developed in a patient with cirrhosis and ascites, was consistent with HH. There was no clinical or radiologic evidence of malignancy or pancreatic disease.

In patients with confirmed HH, the mainstay of treatment is reducing the volume of ascites produced; this is achieved primarily by sodium restriction and diuretic therapy. Should noninvasive management fail to control the ascites, therapeutic paracentesis and thoracentesis may be used for temporary relief of symptoms. Serial drainage is not recommended because of the resultant fluid and protein depletion.[2]

Of the proposed interventions referred to in the literature, none has had a more unsatisfactory outcome than tube thoracostomy. In 1986, Runyon et al. proposed that HH should be a relative contraindication to chest tube placement because the mortality rate of chest tube thoracostomy was 100%.[7] The morbidity and mortality related to this procedure has been attributed to the massive protein, electrolyte, and volume losses incurred by the constant drainage of fluid. Tube thoracostomy in conjunction with chemical pleurodesis has had mixed results because the rapid reaccumulation of fluid prevents adequate contact between the parietal and visceral pleura.[8,9]

Peritoneovenous shunting has been advocated for treatment of HH, but has been shown to be unpredictable in its efficacy.[10] Peritoneovenous shunting often cannot compete with the negative intrathoracic pressure gradient for drainage of the peritoneal fluid and thus, does not consistently result in resolution of HH.[2] In addition, LeVeen and Denver shunts have multiple potential complications including infection, coagulopathy, and increased cardiac preload, resulting in pulmonary edema.

Surgical repair of the diaphragmatic defects has been shown to be effective in several case reports.[11,12] This procedure is rarely an option for two reasons: 1) often cirrhotic patients are a poor surgical risk, and 2) the diaphragmatic defects may be microscopic.

Refractory HH may resolve after placement of a TIPS. TIPS is a radiologic technique where an expandable metal stent is placed by angiography. The stent extends from the hepatic vein through the hepatic parenchyma in a branch of the portal vein creating a portosystemic shunt and decreasing portal vein pressure.[13] This approach differs from paracentesis, thoracentesis, thoracostomy and peritoneovenous shunting because it reduces the rate of production rather than only the volume of ascites or pleural effusion thus treating the etiology of the HH. In one study, TIPS was effective in 79.1% of patients with refractory HH. Efficacy was defined as a partial (20.8%) or a complete resolution (58.3%) of the respiratory symptoms associated with the effusion.[6]

In any patient with a pleural effusion, HH must be excluded before tube thoracostomy is performed. A history of hepatic disease, physical stigmata of chronic liver disease, or laboratory values suggestive of liver disease or portal hypertension should prompt an immediate evaluation for the possibility of HH. A DRAS scan is a relatively low risk and easily obtainable nuclear medicine scan and is the procedure of choice to diagnose HH. Early diagnosis may prevent the adverse consequences of inadvertent chest tube placement and lead to earlier appropriate therapy for this condition. The practitioner should remember that in cases of hepatic hydrothorax, the management should be focused on the primary problem, which is portal hypertension, rather than the effusion, which is merely a secondary complication.

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Pneumomediastinum: the Valsalva crunch

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ABSTRACT: *The following case presentations illustrate the diverse clinical manifestations and benign self-limited course of spontaneous pneumomediastinum. The discussion includes the mechanisms involved, the symptoms, the radiographic findings, the potential complications, the exclusionary diagnosis, and the appropriate management of this condition.*

Clinical histories

The first case is a six-week pregnant, 18-year-old, unmarried woman who presented with intractable vomiting, hematemesis, retrosternal chest pain, and dysphonia. Her history included an elective termination of pregnancy three years ago. Physical examination revealed evidence of subcutaneous emphysema and a positive Hamman's sign. A shielded chest x-ray revealed evidence of free air in the soft tissues of the neck and in the mediastinum extending into the upper abdomen (**Figure 1A, 1B, 1C**). A gastrograffin study was performed, which did not reveal any evidence of esophageal perforation. A computed tomography (CT) scan again confirmed the presence of free air in the mediastinum (**Figure 1D**). An upper endoscopy showed a small tear in the mucosa of the distal esophagus, which was probably the source of the hematemesis, but too superficial to account for the presence of free air in the mediastinum.

In the second case, a 17-year-old man was brought to the emergency department unconscious after smoking heroin and marijuana the previous night. After being revived with naloxone, he gave a history consistent with the use of repeated and sustained Valsalva-like maneuvers while using inhalational drugs to enhance the "high." On physical examination he did not have any signs sug-

gestive of spontaneous pneumomediastinum. However, a chest x-ray showed free air in the mediastinum, outlining the left cardiac border and tracking into the subcutaneous tissues of the neck (**Figure 2A**). A CT scan demonstrated pockets of free air in the mediastinum (**Figure 2B**). A Gastrografin study did not reveal esophageal perforation. Both of these patients improved with supportive management, and follow-up chest x-rays showed resolution of pneumomediastinum.



Figure 1A.



Figure 1B.



Figure 1C.

Discussion

The term spontaneous pneumomediastinum (SPM) is used for mediastinal emphysema, which occurs in the absence of an obvious perforation of an intrathoracic structure. The condition was first formally described in 1939 by Louis Hamman.[1] It has been linked with Valsalva-type maneuvers such as prolonged coughing, vomiting, forceful defecation, parturition, strenuous exercise, and even vigorous pulmonary function testing.

The mechanisms involved in the development of pneumomediastinum were first described by Macklin and Macklin based on their work with various animal models.[2,3] It is hypothesized that repeated and sustained Valsalva-type maneuvers cause the overdistended alveoli to rupture. Air then leaks into the perivascular adventitium resulting in interstitial emphysema. Because mean pressure within the mediastinum is always somewhat lower than in the peripheral lung parenchyma, air then dissects proximally along the bronchovascular sheaths to the lung hilum and mediastinal soft tissue. Having reached the mediastinum, accumulated air may decompress into cervical and subcutaneous tissues or into the retroperitoneum, dissecting along facial planes. If mediastinal pressure increases abruptly, or decompression via these routes is not sufficient to relieve the tension, the mediastinal pleura may rupture, resulting in pneumothrax.



Figure 1D.



Figure 2A.

In both the cases presented, repeated and sustained Valsalva-like maneuvers seem to be central to the pathogenesis of pneumomediastinum. During vomiting, abdominal muscles contract against a closed glottis and cause alveolar hyperinflation. This entity has thus been described in association with hyperemesis gravidarum.[4,5] During inhalational drug use, forceful inhalation to total lung capacity followed by vigorous straining against a closed glottis results in distention of alveoli.[6,7] Moreover, some cocaine users have an accomplice blow into their mouths through a cardboard tube, adding positive end-inspiratory pressure, which further increases alveolar distention. Such maneuvers are practiced by drug abusers to obtain optimal drug effect.[8-10]

Symptoms in patients with SPM include pleuritic chest pain, neck pain, chest and neck tightness, sore throat, neck stiffness, neck swelling, cough, dyspnea, voice change, and hoarseness.[11,12] Principal signs are subcutaneous emphysema and a positive Hamman's sign, described as a crunching sound heard synchronous with cardiac systole.[11,12] First described by Hamman in 1939, Hamman's sign has been traditionally described with pneumomediastinum, but it has also been associated with other conditions like a left-sided pneumothorax.[13] The physical examination can sometimes be completely normal.

Radiographic findings include streaks or pockets of gas density within subcutaneous regions outlining the tissue planes of the neck, pectoralis muscle, and axilla. Collections of air may form outlining mediastinal structures like the aorta, trachea, vena cava, diaphragm, and the heart.

Mediastinal air may deflect the pleura laterally along the left heart border. On PA view of the chest x-ray, this will create a lucent strip of air medially with a visible vertical pleural line. Air anterior to the heart is best visualized on a lateral chest x-ray. Air may rupture through the parietal pleura and escape into the pleural cavity creating a pneumothorax.[3]

The potential complications include: (1) pneumothorax, which may be bilateral or under tension; (2) "tension pneumomediastinum," in which the heart is compressed by accumulated mediastinal air, reducing cardiac output by tamponade effect; (3) "air block," a term coined to describe the splinting action of air within the connective tissue of the lung, further occluding the airways and promoting alveolar hyperinflation; and (4) impedance of pulmonary vascular flow by air within the vessel sheaths, compromising forward cardiac output.

Of the potential complications, pneumothorax is the most frequently encountered in clinical practice, especially in mechanically ventilated patients. Tension pneumomediastinum and air block have been more of a concern in neonates than in adults. However, tension pneumomediastinum has been reported to complicate pneumocystis carinii pneumonia in acquired immunodeficiency syndrome.[14] Pulmonary vascular obstruction similarly has not been demonstrated as a clinically significant complication. In most cases, mediastinal accumulation of air follows a typically benign course, probably because of decompression along the anatomical routes.

The diagnosis of spontaneous pneumomediastinum is one of exclusion. Exclusion of the potentially life threatening condition of esophageal perforation is important. This is often done

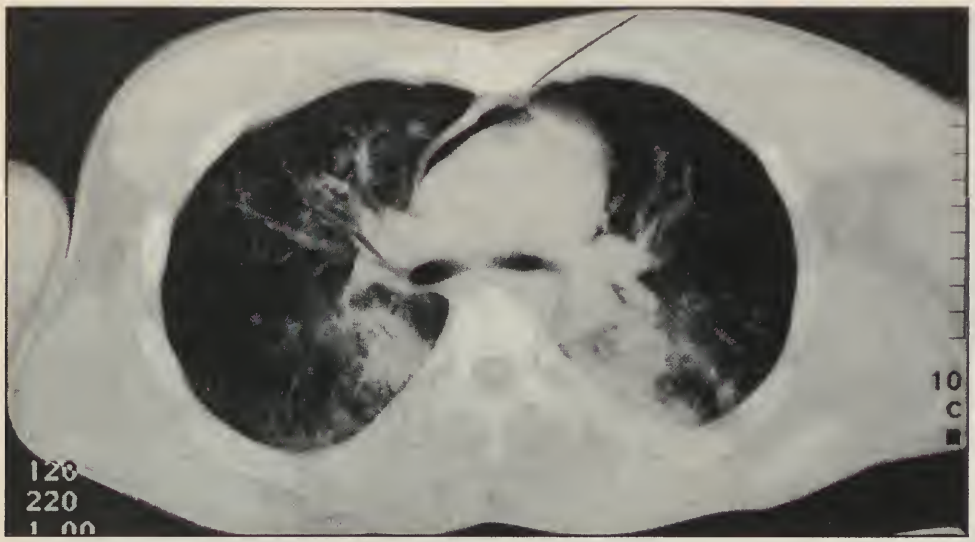


Figure 2B.

using a gastrograffin swallow. Gastrograffin is preferred over barium because it is water soluble and therefore any leakage into the mediastinum does not result in a foreign body reaction.

The natural history of this condition is usually benign and self-limiting. Management involves admission for observation, rest, reassurance, and analgesics. Antibiotics are used as indicated. One hundred percent oxygen may be given to reduce the partial pressure of tissue nitrogen and increase the gradient for resorption in cases of delayed resolution. Hyperbaric oxygen has been used to alleviate the symptoms and reduce the size of air pockets. Patients need to be followed closely for potential complications.

Conclusion

Increased awareness of spontaneous pneumomediastinum, its diverse clinical manifestations, and its benign self-limited course will lead to the early diagnosis and appropriate management of this condition.

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Seroprevalence study of Hantavirus infection in the community based population

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ABSTRACT: *The genus Hantavirus, family Bunyaviridae, comprise at least 20 distinct viruses. Ten of these have been linked to specific human diseases. Hemorrhagic fever with renal syndrome has been recognized since the 1950s. Hantavirus pulmonary syndrome was recognized in the United States in 1993. Epizootiologic studies of Norway rats in the Baltimore area have shown that rodent infections with hantaviruses are common and geographically widespread with prevalence reaching 44% in tested rat populations. These viruses are antigenically related to the Seoul virus. Hantavirus infections in humans occur through transmission from a rodent reservoir, primarily by inhalation of virus laden rodent excreta. There is no evidence to support person-to-person transmission of any known Hantavirus.*

To establish the prevalence of Hantavirus infections in humans in the Baltimore area we collected sera from 1,212 persons attending a community based health care system. These were tested for antibodies against three reference Hantavirus strains: Hantaan (HTN), Seoul (SEO), and Convict Creek (HN017). HN017 was chosen to represent the SinNombre (SN-like) strains of Hantavirus. Sera from nine patients were positive to Hantavirus specific antibodies, HTN, and SEO by Enzyme Linked Imuno Sorbent Assay (ELISA). No sera were positive for HN017 antigen. All sera that

were positive for HTN and SEO were tested by western blot for HTN. All nine sera were confirmed positive by western blot. This suggests that unrecognized infections with Hantaan or Seoul-like viruses occur in the Baltimore area in humans, although the prevalence rate in humans is low (0.74%). Epidemiologic monitoring may be warranted to establish the health implications of these infections.

During the Korean conflict, in the early 1950s, U.S. Army troops developed a previously unrecognized severe, acute febrile illness, Korean hemorrhagic fever (KHF). This illness was characterized by fever, myalgia, and hemorrhagic manifestations. Acute renal failure and hemodynamic instability frequently occurred in infected patients. This disease was associated with approximately 10% mortality in clinically identified cases. The causative agent of KHF was finally identified in 1976 in the lung tissue of striped field mice (*Apodemus agrarius*) and was named Hantaan virus after the Hantaan River, which runs along the 38th Parallel between South and North Korea.[1] In 1978 this virus was isolated from patients with KHF.[2] Since then Hantaan virus has been recognized as one of a group of at least 20 distinct viruses. Ten of these have been linked to specific human diseases (**Table 1**). KHF has been identified as one form of a large group of related illnesses recorded under more than 150 names. In 1982, the World Health Organization placed all of these illnesses under the rubric of hemorrhagic fever with renal syndrome (HFRS).[3] Seoul virus has been recognized as a cause of a less severe form of HFRS. This Hantavirus has been recognized among rat populations in cities worldwide, including the United States.

Hantavirus pulmonary syndrome (HPS) was first described in 1993 when a cluster of cases of unexplained adult respiratory distress syndrome occurred in the Four Corners region of the southwest United States. Mortality was 50% in patients identified with this syndrome.[4] A novel Hantavirus was identified in the tissues of patients identified with this syndrome, and subsequently, isolated from rodents trapped near patients' homes. This Hantavirus was named Sin Nombre virus. The reservoir for Sin Nombre virus has been identified as the deer mouse (*Peromyscus Manicyylatus*).[5] Since the original Four Corners outbreak, more than 250 cases of HPS have been reported throughout the United States and South America. Other cases of HPS hantaviruses in the southern United States and South America are caused by other newly recognized hantaviruses and inlcude Bayou, Black Creek Canal, and Andes viruses.[6]

Rat-associated Hantavirus in Maryland

Natural history of infection. The distribution of hantaviruses occurs in association with specific rodent carriers. Humans acquire the infections primarily through inhalation of aerosolized, virus-laden rodent excreta. Transmission may also occur from rodent bites, direct contamination of broken skin with rodent excreta, and possibly through ingestion of contaminated food or water.[7] The risk of human hantaviruses infection is a function of the density of the local rodent reservoir population, the prevalence of infection among rodents, and the frequency of activities that result in contact between humans and rodent excretes.[8] There is no evidence to support person-to-person transmission of any Hantavirus infection. Seoul virus has been recognized as the cause of a less severe form of HFRS. These viruses have been recognized among rat populations in cities worldwide. Hantaviral infections of Norway rats (*Rattus norvegicus)* in the United States have been documented and shown, by both virologic and serologic techniques, to be caused by a virus antigenically related to Seoul virus.[9] *The prevalence of this infection in rats collected in Baltimore, Maryland, has been shown to be as high as 44%. Hantavirus infections in rats are geographically*

TABLE 1. Members of the genus *Hantavirus*, family *Bunyaviridae*

Species	Disease	Reservoir	Distribution
Hantaan	HFRS	*A. agrarius*	China, Russia, Korea
Belgrade/Dobrava	HFRS	*A. flavicollis*	Balkans
Seoul	HFRS	*R. norvegicus*	Worldwide
Puumala	HFRS	*Cl.glareolus*	Europe, Russia, Scandinavia
Sin Nombre	HPS	*P. maniculatus*	U.S., Canada
New York	HPS	*P. leucopus*	U.S.
Black Creek Canal	HPS	*S. hispidus*	U.S.
Bayou	HPS	*O. palustris*	U.S.
Andes	HPS	*O. lonicudatus*	South America
Laguna Negra	HPS	*C. laucha*	South America

COMMENTARY

Hantavirus in Baltimore: a potential danger?

by Timothy D. Baker, M.D.

The authors of the article on human seroprevalence of Hantavirus in Baltimore are to be congratulated on their pioneering effort. Although the study population of 1,000 patients is not representative of the population of Baltimore, the study is a first step in measuring the magnitude of a potential infectious disease in Baltimore. The sample studied yielded less than 1% of patients with evidence of previous infection (and one of these patients may well have been infected in Korea). It might be worthwhile to test patients coming from areas of the city previously identified as having high levels of infection of Hantavirus in the rat population.[1]

Following the outbreak of Hantavirus in New Mexico[2] with fatal cases, there has been renewed interest in the medical community. Special studies in the Americas have been reviewed in a recent publication.[3]

Baltimore is an excellent site for further research in the possible urban transmission of Hantavirus to humans based on the earlier studies of Hantavirus in the rat population.

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widespread and enzootic, being identified in rats collected in 14 separate locations in the Baltimore area.[10,11]

Materials and methods

To establish if Hantavirus transmission occurred between rats and humans in the Baltimore area, we undertook a serologic survey of persons attending a community based hospital for inpatient and outpatient services. One thousand four hundred thirty nine serum samples were obtained from 1,212 persons who had received either inpatient or outpatient services at St. Agnes Hospital, Baltimore, Maryland. Sera were randomly collected from all specimens submitted to the laboratory during the period of December 1997 through August 1998. Seven hundred twenty six (59%) persons tested were women. Over half of the patients surveyed were over 57.

Serologic testing

Sera were tested for IgG antibodies by Enzyme Linked Imuno Sorbent Assay (ELISA) using Hantavirus antigens bound to a microtiter plate as previously described.[12] Sera were screened at a 1:100 dilutions against prototype HTN strain 76-118, SEO strain 80-39, and HN107, a strain of SN.[13] An optical density ELISA value was considered positive if greater than 0.2. To confirm the ELISA results against HTN strains a western blot analysis of tentatively positive sera was performed.[14] Sera samples were immunoblotted against Vero E6 cell lysate infected with HTN. Samples with antibodies against nucleocapsid protein (~50KD) were considered positive. At this time no western blot is available for other Hantavirus strains, including SEO and SN strains.

Results

Sera from nine subjects were positive for hantaviruses-specific antibodies (HTN, SEO) by ELISA. All nine were confirmed positive by western blot. No sera were positive for HN107 (SN-like) antibody. Medical records from eight of these patients indicated birth in Maryland. One patient was born in Korea. Three men, aged 55, 66, and 69 years, and six women, aged 62, 68, 80, 81, 84 and 89 years, were sera positive.

Discussion

Urban cases of HFRS, with symptoms ranging from mild

influenza-like illness to severe hemorrhagic fever with renal syndrome, have been attributed to Seoul virus. Seoul virus–associated HFRS has been linked to exposure to common urban rats (*Rattus norvegicus and Rattus rattus*) and outbreaks have been reported worldwide. Hantaviral infections in wild rats (*Rattus norvegicus*) of the United States were documented and shown, by virologic and serologic techniques, to be caused by a virus antigenically related to Seoul virus. *The prevalence of this infection in the rats of Baltimore, Maryland, is high (44%), geographically widespread, and enzootic.* Our study showed that humans have Hantavirus-specific antibodies to HTN and SEO. This study suggests that unrecognized transmission of Hantavirus probably occurs from rodents to humans in the Baltimore area, however, these events are rare. This study demonstrates a seroprevalence of 0.74% in the sample studied. Further, epidemiologic monitoring may be warranted to establish the health implications of these infections.

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Adherence to the JNC VI guidelines for the treatment of hypertension in the resident clinic

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ABSTRACT: *The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI) provided guidelines for the treatment of hypertension. This study examined the adherence to the JNC VI guidelines by a retrospective chart review of patients treated for hypertension in the internal medicine house staff practice at a university teaching hospital in the year after publication of the JNC VI.*

The JNC VI was published in November 1997 and expanded on the recommendations of the JNC V for the treatment of hypertension (HTN).[1] The JNC VI recommended diuretics and beta blockers for initial therapy in patients with uncomplicated HTN, but recognized compelling indications in which other classes of medications have demonstrated greater benefit such as in diabetes mellitus (DM), congestive heart failure (CHF), and coronary artery disease (CAD). These guidelines were based on numerous studies showing benefits of decreased morbidity and mortality with specific classes of blood pressure (BP) medication for certain indications in patients with HTN.

Studies examining physician prescribing patterns after the publication of the JNC V noted poor compliance with the JNC V recommendations and a preference for newer, more expensive medications over diuretics and beta blockers.[2,3] Other studies found the prescribing patterns complied with[4] or were influenced by[5] the publication of the JNC V. None of these studies factored in comorbid conditions that may have influenced physician decisions, probably because the JNC V did not give specific recommendations for these conditions.

We examined resident physician prescribing patterns of antihypertensive medication in the year after the publication of the JNC VI to evaluate the compliance with the JNC VI recommendations in each of the major categories described as "compelling indications unless contraindicated." We also examined the documentation of alternate choices by the resident physicians and the adequacy of BP control.

Methods

Two hundred charts of patients with a diagnosis of HTN being treated with antihypertensive medication and seen by all three years of internal medicine resident physicians in the resident clinic at Johns Hopkins Bayview Medical Center were retrospectively and randomly selected. To be included, patients had to be seen at least three times in the resident clinic and at least once in 1998, which was after the publication of the JNC VI guidelines. All visits after December 31, 1998, or notes written by any provider other than a resident physician were excluded. Medical therapy for HTN and compliance were determined by the last note written in 1998 for each patient, but all notes written before 1999 were evaluated for documentation.

The four major categories of patients, appropriate medical treatment in each category, and criteria for BP control were based on the JNC VI guidelines. The patients were considered to be on guideline medications if their treatment included the following criteria: (1) for uncomplicated HTN, either a diuretic or a beta blocker; (2) for HTN and DM (unless urine microalbumin is < 30 mcg / mg creatinine within the preceding 12 months), an angiotensin-converting enzyme inhibitor (ACEI) or an angiotensin II receptor blocker (ARB); (3) for HTN and CHF, an ACEI or ARB; and (4) for HTN and CAD, a beta blocker. If hypertensive patients had CAD and DM or CHF they were required to be on a beta blocker and either an ACEI or ARB to meet criteria.

If a patient was not prescribed a guideline medication, the chart was examined to determine if a reason for variance was documented. Any reasons documented by the resident in the clinic notes were evaluated for acceptability. Acceptable reasons included side effects, contraindications, patient refusal or noncompliance, an inability to afford guideline medications, or an alternative choice based on a comorbid condition. For uncomplicated HTN, resident physicians had to document both a reason for not prescribing a diuretic and for not prescribing a beta blocker. Because many of the contraindications and side effects for ACEI and ARB overlap, resident physicians only had to document one reason in HTN and DM or HTN and CHF.

The sitting BP and medication prescribed for HTN were recorded from the last visit. BP control was considered adequate if < 140/90 mm Hg or, if DM or chronic renal insufficiency (CRI) was present, < 130/85 mm Hg. If the BP control was not considered adequate, the last note was examined for documentation of noncompliance.

Results

Overall, the adherence to guidelines (ADH) was 72% (143/200) and adherence to guidelines adjusting for acceptable documentation for non-adherence (ADH-ADJ) was 80% (159/200) (**Table 1**). In each category, the following was observed: 1) uncomplicated HTN: ADH = 69% (65/94), ADH-ADJ = 72% (68/94); 2) HTN and DM: ADH = 77% (44/57), ADH-ADJ = 88% (50/57); 3) HTN and CHF: ADH = 87% (20/23), ADH-ADJ = 100% (23/23); 4) HTN and CAD: ADH = 75% (39/52), ADH-ADJ = 87% (45/52).

The resident physicians documented reasons for not following guideline medications in 42% (24/57), and 67% (16/24) of this variance was appropriate (**Table 2**). The reasons given for variance were medication side effects (12 patients), contraindications (8 patients), patient refusal or noncompliance (2 patients), inability to afford guideline medication (2 patients), and an alpha-blocker used in uncomplicated HTN and benign prostatic hypertrophy (2 patients). In seven of the eight cases in which the reasons for variance were considered unacceptable, only one acceptable reason for not using either a diuretic or a beta blocker was documented. In the remaining case, a patient with uncomplicated HTN was prescribed captopril and clonidine for financial reasons. This was not considered an acceptable reason because hydrochlorothiazide, a guideline medication, is considerably less expensive than captopril.

TABLE 1. Adherence to JNC VI guidelines with and without adjustment

Patient category	Follows guidelines	Adjusting for acceptable documentation
all cases	143/200 (72%)	159/200 (80%)
Uncomplicated HTN	65/94 (69%)	68/94 (72%)
HTN and DM	44/57 (77%)	50/57 (88%)
HTN and CHF	20/23 (87%)	23/23 (100%)
HTN and CAD	39/52 (75%)	45/52 (87%)

TABLE 2. Documented variance from JNC VI guidelines for those patients not prescribed guideline medication

Patient category	Documentation	Considered acceptable reasons
all cases	24/57 (42%)	16/24 (67%)
Uncomplicated HTN	11/29 (38%)	3/11 (27%)
and DM	6/13 (46%)	6/6 (100%)
and CHF	3/3 (100%)	3/3 (100%)
and CAD	6/13 (46%)	6/6 (100%)

BP control was considered adequate in 43% (62/143) of those patients prescribed guideline medications and 33% (19/57) of those patients not prescribed guideline medications. BP control was similar in the two groups for each of the four major categories, even adjusting for documented noncompliance (**Table 3**). The poorest BP control was seen in the patients with HTN and DM. Adjusting for adequate BP control in DM and CRI from < 130/85 mm Hg to < 140/90 mm Hg resulted in similar control as the other major categories (**Table 4**).

For uncomplicated HTN, diuretics were most commonly prescribed (52%) followed by CCBs (43%) and ACEIs (31%). Beta blockers, which along with diuretics, were recommended by the JNC VI for initial therapy, were prescribed to only 29% of these patients (**Table 5**). Of patients with uncomplicated HTN who were not prescribed guideline medications, 66% (19/29) were prescribed a regimen that included CCBs and 55% (16/29) were prescribed only a CCB. The medications prescribed in the other three major categories are also listed in Table 5. It is interesting to note that all but one of the CCBs prescribed to patients in this study were long-acting formulations.

Discussion

Adherence to the JNC VI guidelines was best in the groups with HTN and DM, CHF, and/or CAD and was lowest in the uncomplicated HTN group, where CCBs were over prescribed. There are several possible reasons why this may have occurred. The resident physicians may have been more familiar with the studies involving ACEIs and DM or CHF and beta blockers and CAD than those involving diuretics and beta blockers in the treatment of uncomplicated HTN. Alternatively, some may have felt that the data for prescribing diuretics and beta blockers were not strong enough to warrant a change to one of these agents from the non-guideline medication the patient was already taking. With respect to initiating therapy, some resident physicians may have chosen newer agents such as calcium channel blockers (CCBs) due to the ease of prescribing these medications in terms of laboratory monitoring or the perception of fewer side effects. It is possible that the resident physicians viewed guideline medications as less effective for lowering BP than other medications. This study demonstrates that this view is inaccurate; patients treated with guideline mediation had at least as good BP control as patients not treated with guideline medications. Also, the role of pharmaceutical promotion practices in terms of advertising and stocking the sample cabinet may have had a large impact on prescribing patterns by the resident physicians despite the fact that face-to-face sales activities are prohibited in the resident clinic.

BP control was similar in the patients on guideline medications as those who were not, and the poorest control was seen in those patients with HTN and DM. When the stricter criteria for adequate BP control in DM or CRI were relaxed

TABLE 3. Acceptable blood pressure control categorized by treatment with guideline medication

a. patients prescribed guideline medications

Patient category	Acceptable BP	Subtracting poor compliance
all cases	62/143 (43%)	62/133 (47%)
Uncomplicated HTN	29/65 (45%)	29/62 (47%)
HTN and DM	7/44 (16%)	7/39 (18%)
HTN and CHF	12/20 (60%)	12/20 (60%)
HTN and CAD	23/39 (59%)	23/37 (62%)

b. patients not prescribed guideline medications

Patient category	Acceptable BP	Subtracting poor compliance
all cases	19/57 (33%)	19/51 (37%)
Uncomplicated HTN	12/29 (41%)	12/24 (50%)
HTN and DM	2/33 (15%)	2/21 (17%)
HTN and CHF	1/3 (33%)	1/3 (33%)
HTN and CAD	5/13 (38%)	5/13 (38%)

TABLE 4. Percent of patients with HTN and DM with acceptable blood pressure control, adjusted

a. adequate BP control in DM and CRI as <130/85

Follows guidelines	7/44 (16%)	Subtracting poor compliance	7/39 (18%)
Does not follow guidelines	2/13 (15%)	Subtracting poor compliance	2/12 (17%)

b. adjusting for good BP control in DM as <140/90 (unless CRI)

Follows guidelines	15/44 (34%)	Subtracting poor compliance	15/39 (38%)
Does not follow guidelines	3/13 (23%)	Subtracting poor compliance	3/12 (25%)

c. adjusting for good BP control in DM as <140/90 (even in CRI)

Follows guidelines	16/44 (36%)	Subtracting poor compliance	16/39 (41%)
Does not follow guidelines	5/13 (38%)	Subtracting poor compliance	5/12 (42%)

from < 130/85 mm Hg to < 140/90 mm Hg, this disparity disappeared. This could be explained by a lack of knowledge or acceptance of the stricter criteria for these indications, which has concerning implications with respect to the progression of renal parenchymal disease. The JNC VI recommends an even lower BP goal (<125/75 mm Hg) in patients with proteinuria in excess of one gram per 24 hours, which was not taken into account in this study because few patients with CRI had a documented measurement of 24-hour urine protein excretion.

This study has some limitations. We looked at only one specific group of physicians, resident physicians working at a teaching hospital. Therefore, it is difficult to make generalizations about prescribing patterns of other physicians. Furthermore, there were some deviations from the JNC VI guidelines that need to be considered. The JNC VI lists isolated systolic HTN in older patients as a compelling indication. We did not list this as a major criterion because all of the patients who were 60 years or older with systolic HTN had diastolic HTN as well. Also, the JNC VI listed only type 1 DM with proteinuria as a compelling indication, but we chose to include type 2 DM given the strength of the data demonstrating that ACEIs slow the progression of diabetic nephropathy in type 2 DM.[6,7] All of the 57 patients in this study with DM had type 2 DM. We also chose to make the criteria stricter by requiring the physician to document that early signs of diabetic nephropathy did not exist if an ACEI or ARB was not prescribed by requiring a urine microalbumin level < 30 mcg / mg creatinine within the preceding 12 months. A final deviation from the JNC VI guidelines was the inclusion of ARB as an acceptable alternative to an ACEI in CHF and DM. The Evaluation of Losartan in the Elderly (ELITE) study found that losartan, an ARB, compared favorably with captopril, an ACEI, in older heart failure patients.[8] Another study with losartan demonstrated safe and effective control of elevated BP and improvement of the abnormal hemodynamics typical of pronounced CHF.[9] Consequently, we classified the one patient prescribed losartan for HTN and CHF as a patient on a guideline medication. There are also some data supporting the use of an ARB as an alternative to an ACEI for the treatment of HTN and DM with proteinuria. A head-on comparison of ACEIs and ARBs in non-diabetic patients showed that there were equal reductions in proteinuria within the two groups.[10] Other studies have demonstrated an acute reduction of microalbuminuria with ARBs in patients with type 2 DM.[11,12] Studies evaluating the long-term effects of ARBs on the progression of diabetic nephropathy are in progress. We chose to classify the five patients in this subgroup on losartan as patients on a guideline medication.

TABLE 5. Medications prescribed in each category

Medication class	Uncomplicated HTN	HTN and DM	HTN and CHF	HTN and CAD
diuretics	49/94 (52%)	26.57 (46%)	17/23 (74%)	20/52 (38%)
beta blockers	27/94 (29%)	21/57 (37%)	9/23 (39%)	39/52 (75%)
ACE inhibitors	29/94 (31%)	39/57 (68%)	19/23 (83%)	26/52 (50%)
CCBs	40/94 (43%)	17/57 (30%)	4/23 (17%)	21/52 (40%)
alpha blockers	7/94 (7%)	3/57 (5%)	1/23 (4%)	3/52 (6%)
clonidine	3/92 (3%)	6/57 (11%)	0/23 (0%)	1/52 (2%)
ARBs	2/94 (2%)	5/57 (9%)	1/23 (4%)	2/53 (4%)
nitrates	0/94 (0%)	8/57 (14%)	5/23 (22%)	19/52 (37%)
hydralazine	0/94 (0%)	0/57 (0%)	1/23 (4%)	1/52 (2%)

Another limitation is that BP control was defined by only one reading at one visit, which does not account for normal fluctuations in BP. Because the criteria for adequate BP control were defined equally for all patients, the comparisons of patients in the two categories based on these criteria remain unaffected. The overall BP control of just over 40% (81/200) in our study compares favorably to the National Health and Nutrition Examina-

tion Survey (NHANES III, phase 2) data that found a BP < 140/90 mm Hg in only 27% of patients taking antihypertensive medication.[1]

The advantage of this study over previous studies that evaluated the impact of the JNC on physician prescribing patterns is that we looked at subgroups of patients with HTN to account for the individualization of treatment based on comorbid conditions. We also examined the charts of these patients to account for documented reasons for variance from guideline medications. We feel that this better accounts for the thinking of the physician in each case and may explain why the percentage of physicians complying with the JNC VI is higher in our study than in previous studies[2-4] that evaluated compliance with the JNC V.

Conclusion

In summary , adherence to the JNC VI is reasonably good in this group, but was best in the treatment of HTN with comorbid conditions. It is unclear why the adherence to the JNC VI is not as good in treating patients with uncomplicated HTN. It is also unknown whether these findings would be similar in other groups of physicians. Further study is needed in a larger group of physicians to test our conclusions and to determine why these findings may be true.

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The Maryland Defense Force (MMDF) is in search of physician volunteers. The MDDF, along with the Army National Guard and the Air National Guard, is a part of the military department of the state of Maryland. The military department is composed of citizen volunteers, both male and female, organized along military lines. The MDDF is not made up of troops of war under the control of the President of the United States. Its members serve the citizens of the state of Maryland in response to orders from our governor. The MDDF cannot be federalized or sent beyond the borders of Maryland.

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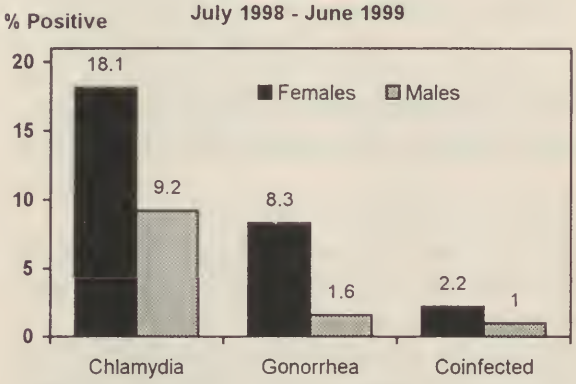
STD Screening of Adolescents – A Program at Maryland Juvenile Justice Facilities
Influenza Vaccination – The Physician's Role
Surveillance for West Nile Virus in Maryland

The Importance of Chlamydia and Gonorrhea Screening for Adolescents Is Underscored by a Program at Maryland Juvenile Detention Facilities

Sexually transmitted diseases (STDs) continue to impose a serious negative impact on the public health of Maryland. Maryland case rates for reportable STDs rank highly compared to other states: first for infectious syphilis, fifth for chlamydia, and seventh for gonorrhea in 1997 (the most recent finalized surveillance data). Chlamydia and gonorrhea, the two most common reported diseases, are the cause of most pelvic inflammatory disease, the leading preventable cause of infertility in the United States. Adolescents and young adults are at greatest risk for acquiring chlamydia and gonorrhea infection due to a high level of risky sexual behaviors as well as increased biological susceptibility. Screening of high-risk youth can detect asymptomatic disease; youth who test positive benefit from early detection and immediate treatment.

The Maryland Department of Juvenile Justice collaborates with the Department of Health and Mental Hygiene (DHMH), Division of Sexually Transmitted Diseases/HIV Partner Counseling and Referral Services and the DHMH Laboratories Administration to screen male and female adolescents for gonorrhea and chlamydia upon admission at selected juvenile facilities. Initiated in July 1998,

Figure 1. Positivity Rates for Chlamydia and Gonorrhea in Selected Maryland Juvenile Justice Facilities
July 1998 - June 1999



screening for chlamydia and gonorrhea utilizing ligase chain reaction (LCR) tests on urine specimens at six juvenile justice facilities continues into the second year. A seventh site was added in 1999. With urine-based testing, one specimen can be tested for both gonorrhea and chlamydia using an easily obtained specimen, overcoming what has been a significant barrier to care: the pelvic exam and urethral swab. Juveniles from the entire state of Maryland are represented in the participating facilities with three facilities located in the high STD morbidity area of Baltimore City.

This program was initiated due to evidence of a large burden of disease in Maryland youth involved with the detention system. Prior to implementation of

urine-based screening, of about 5,000 youth that received a Nursing Assessment and Health Screen during 1997, only 872 were screened for chlamydia and 287 were screened for gonorrhea; positivity rates were 14% and 6%, respectively. Most of these youth screened were symptomatic. In contrast, during the first 12-month period of the initiative, 473 females and 2,570 males were screened (symptomatic and asymptomatic). The overall positivity rate for chlamydia was 10.7% and for gonorrhea 2.7%. The overall coinfection rate with chlamydia and gonorrhea was 1.2%. Females had higher rates of chlamydia and gonorrhea infection either alone or co-infected compared to males (Figure 1). These rates of infection for Maryland juveniles are similar to those reported for juveniles screened in a New Jersey correctional facility (chlamydia; 10.8% and gonorrhea; 2.5%).

The chlamydia infection rates detected for youth in Maryland juvenile facilities are not unusual; they are comparable to rates found for sexually active adolescents screened at Maryland public health clinics. The high rates of infection for chlamydia and gonorrhea observed for these youth underscore the importance of screening all sexually active adolescents for STDs.

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Influenza Vaccination: Physicians Are the Critical Link in Protecting Their Patients

The impact of influenza

The Centers for Disease Control and Prevention (CDC) estimates there are 20,000 deaths from influenza in the United States each influenza season.[1] In Maryland this amounts to about 400 deaths each year. This is in contrast with the number of deaths from other vaccine preventable diseases like measles – no deaths in Maryland in more than a decade.

An additional 110,000 persons are hospitalized each year from influenza in the United States.[1] This translates to more than 2,000 Marylanders hospitalized each year from influenza.

Influenza vaccine often prevents illness in those younger than 65 years; its biggest effect in the elderly is in reducing hospitalizations and deaths. While vaccination is the most effective method for reducing the impact of influenza, antiviral agents provide a useful adjunct for prophylaxis or treatment.

Vaccination levels

Influenza vaccination coverage in persons 65 years of age and older has improved to 60% in 1997. However, this still leaves a substantial proportion of the at-risk population vulnerable.

> Far more Marylanders die from influenza and pneumococcal disease than any other vaccine preventable disease.

Why persons are not vaccinated

A recent analysis of a 1996 Medicare Survey demonstrated that about *1/3 of respondents did not receive influenza vaccine because they did not know it was needed or did not think of it.*[2] *An additional 10% did not receive vaccine because their doctor did not recommend it!*

Physicians are the key

The Health Care Financing Administration (HCFA) has been educating Medicare beneficiaries about the benefits of influenza (and pneumococcal) vaccine through inserts in social security checks and other methods.

However, data collected from the above referenced studies as well as others have made it clear that *physicians play the key role in assuring their senior patients and other high risk patients receive influenza vaccine* each year.

Physicians are encouraged to:

- Offer influenza vaccine to patients seen in their practices from September through the end of influenza season
- Send reminders to patients at the start of influenza season – give their ***endorsement*** of the importance of flu vaccine

Special groups to consider for influenza vaccination

In addition to the usual groups recommended for influenza vaccination (senior citizens, persons with chronic cardiovascular and pulmonary conditions, etc.), physicians are reminded to consider other groups for vaccination:

- Healthy pregnant women who will be beyond the first trimester of pregnancy during influenza season
- Office staff who may transmit influenza to high risk persons
- Persons with diabetes or other metabolic disorders
- Persons with HIV or other immunosuppression

Information on influenza and influenza vaccine

Contact the Center for Immunization, DHMH, at (410) 767-6679, your local health department, or visit the CDC Web site at www.cdc.gov/ncidod/disease/flu/fluvirus.htm. You can download the complete "Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP)" from www2.cdc.gov/mmwr/ mmwr_rr.html.

Don't forget pneumococcal vaccine

Those over 65 years should receive pneumococcal vaccine at least once in their lifetime. For persons at high risk who have not previously been vaccinated with pneumococcal vaccine, strongly consider administering both vaccines concurrently. Both vaccines can be administered at the same time at different sites without increasing side effects. (Influenza vaccine is administered each year, pneumococcal vaccine is not.)

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1996 Medicare Survey:

33% of respondents did not receive influenza vaccine because *they did not know it was needed or did not think of it.*

10% did not receive vaccine *because their doctor did not recommend it!*

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West Nile-like Viral Encephalitis

During late August 1999, an outbreak of arboviral encephalitis was first recognized in the New York City area. Initially the outbreak was attributed to St. Louis encephalitis. However, the cause of the outbreak was later confirmed by the Centers for Disease Control and Prevention (CDC) as a West Nile-like virus. Mosquitoes that feed on infected birds transmit the virus. Humans and other animals are usually dead-end hosts. As of October 15, 1999, a total of 55 laboratory positive human cases of encephalitis caused by the West Nile-like virus have been reported, including six fatal cases.

The West Nile virus (WNV) has an incubation period of 5 to 15 days. WNV usually causes asymptomatic infection or a mild influenza-like illness accompanied by rash and lymphadenopathy. A small percentage of infected individuals, particularly the elderly, develop encephalitis. Maryland has not had a reported case of arboviral encephalitis of any type in humans since 1989. This year, regular testing of mosquito populations by the Maryland Department of Agriculture (MDA) for eastern equine encephalitis (EEE) has yield negative results to date. MDA has not yet begun testing for WNV, but it will begin as soon as test primers become available. At present, dead birds from Maryland are being sent by several agencies to the National Wildlife Health Center for testing.

Maryland has enhanced surveillance for arboviral encephalitis by asking hospital infection control professionals to review recent discharge diagnoses and by asking emergency departments to fax reports of suspect cases. Physicians in Maryland with suspected cases of arboviral disease are encouraged to send paired acute and convalescent sera to the DHMH Laboratories Administration (DHMH Lab) for arboviral testing, although presently this testing does not include WNV. (If CSF is available, it can also be submitted for testing.) If requested, the DHMH Lab will send the samples to CDC to test for WNV. Please contact Laura Montague at the DHMH Lab for further questions regarding human testing (410-767-6153).

Please see the attached arboviral encephalitis fact sheet.

Arboviral Encephalitis Fact Sheet

Encephalitis is an inflammation of the brain

Encephalitis has many different causes including viruses, bacteria, parasites, and toxins. When encephalitis is caused by a virus transmitted by arthropods such as mosquitoes or ticks, it is known as arboviral (short for **ar**thropod-**bo**rne) encephalitis.

In the U.S., arboviral encephalitis is usually caused by viruses transmitted by mosquitoes

There are four main causes of arboviral encephalitis in the U.S. These include eastern equine encephalitis, western equine encephalitis, St. Louis encephalitis, and LaCrosse encephalitis. Recently, cases of encephalitis due to a West Nile-like virus have occurred in the New York City area. These arboviruses, which are usually found in birds or small rodents, are transmitted to humans by the bite of an infected mosquito; they are not spread directly from animal to human or human to human. Arboviral infections are most common in the summer and early fall. In Maryland, human cases of arboviral encephalitis rarely occur; there have been no reported cases in the 1990's.

Most people who are infected with an arbovirus either do not get sick or have mild symptoms

A small percentage of infected people develop symptoms of encephalitis; these symptoms may include:

- Fever
- Headache
- Disorientation
- Weakness or paralysis
- Seizures
- Coma
- Personality changes
- Other neurological problems

Symptoms usually occur 5-15 days after exposure to a mosquito carrying the virus. Young children and the elderly are most susceptible to severe illness.

There is no specific treatment for arboviral encephalitis

There is no specific medicine available that will kill the virus. However, supportive treatment can relieve some symptoms. Most people will recover from the illness, but permanent neurological problems and death can occur.

Steps you can take to prevent arboviral encephalitis include:

- Remove standing water (such as water in old tires, buckets, bird baths, clogged gutters etc.) around the home.
- Wear clothing that covers the arms, legs, and feet in order to prevent mosquito bites.
- Use mosquito repellents sparingly on exposed skin. An effective repellent will contain 20% to 30% DEET. Higher concentrations may cause side effects, particularly in children. Follow package instructions carefully.
- Spray clothing with insecticides such as DEET or permethrin to prevent mosquitoes from biting through thin clothing.
- Minimize outdoor activities at dawn, dusk, and in the evening when mosquitoes are most active.
- Inspect window and door screens and repair any holes found.

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17th annual medical and surgical gastroenterology: a multidisciplinary approach, sponsored by the Johns Hopkins University School of Medicine, Johns Hopkins Gallstone and Biliary Disease Center at The Silvertree Hotel, Silvermass, Colorado. Credits: 18 Cat 1 AMA credits. Fee: $595/physicians; $475/residents, fellows and allied health professionals. **Feb. 6–7**

First trimester screening by nuchal translucency, sponsored by Johns Hopkins University School of Medicine, department of obstetrics and gynecology/maternal and fetal medicine. Credits: 7 Cat 1 AMA credits. Fee: $195/physicians; $160/residents, fellows, sonographers, other health professionals. **Feb. 18**

20th annual mid-atlantic meeting of the Society of General Internal Medicine, sponsored by Mid-Atlantic Region of the Society of General Internal Medicine. Credits:7 Cat 1 AMA credits. Fee: $120/members (postdated before 2/11/00); $140/members (postdated after 2/11/00); 160/non members; $50/residents/fellows. **March 10**

Second annual real-time 3D imaging and volume rendering: principles, techniques and clinical applications, sponsored by the Johns Hopkins University School of Medicine, Department of Radiology, at The Hyatt Regency Orlando International Airport, Orlando, Florida. Credits:15 Cat 1 AMA credits. Fee: $300/physicians; $275/residents, fellows, technologists. **March 10–12**

Molecular imaging: improve your practice now, sponsored by the Johns Hopkins University School of Medicine. Credits: 17 Cat 1 AMA credits. Fee: $450/physicians; $350/residents, fellows and technologists. **March 17–18**

Basic concepts in dysphagia diagnosis and management, sponsored by The Johns Hopkins University School of Medicine Johns Hopkins Swallowing Center, at the Renaissance Harborplace Hotel, Baltimore, MD. Fee: $225/physicians; $165/residents, fellows and allied health professionals. **March 22**

Eighth annual multidisciplinary symposium on dysphagia, sponsored by The Johns Hopkins University School of Medicine Johns Hopkins Swallowing Center, at the Renaissance Harborplace Hotel, Baltimore, MD. Fee: $480/physicians; $280/residents, fellows and allied health professionals. **March 23–24**

Spectrum of developmental disabilities XXII: ADHD — a time for clinical and academic review, sponsored by the Kennedy Fellows Association; Society for Developmental Pediatrics; Kennedy Krieger Institute: Johns Hopkins University School of Medicine, division of child development, department of pediatrics. **April 3–5**

28th annual pediatric trends, sponsored by the department of pediatrics. Johns Hopkins University. Credits: 42 Cat 1 AMA credits. Fee: $675/physicians; $450/residents and fellows (postmarked prior to Feb.11); $725/physicians; $495/residents and fellows (postmarked after Feb.11th). **April 10–15**

Advanced pediatric life support courses, sponsored by Johns Hopkins School of Medicine and the Johns Hopkins Pediatric Trauma Center. Credits: 21 Cat 1 AMA credits. Fee: $675. **June 19–21**

Miscellaneous

Contemporary women's health issues, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. E-mail: CME@msnotes.wustl.edu. **Dec. 10**

Topics in cardiology, sponsored by the Washington School of Medicine, St. Louis, Missouri. Info: (314)362-6891, (800)325-9862, Fax: (314)362-1087, http://www.wustl.edu. E-mail: CME@msnotes.wustl.edu. **Dec. 11**

Sixteenth annual CME clinical update in pulmonary disease, sponsored by the department of pulmonary medicine, Deborah Heart and Lung Center, New Jersey, at the Sheraton Atlantic City Convention Center Hotel, Atlantic City, New Jersey. Credits: 7 Cat 1 AMA credits. Fee: $125/physicians; $75/allied health professionals, physicians-in-training. (after Oct. 27th, $175 and $100, respectively). Info: (201)342-5300, Fax: (201)342-7555, e-mail: cmeinfo@cbcbiomed.com. **Dec. 11**

New directions in glaucoma, sponsored by the Maryland Center for Eye Care, University of Maryland School of Medicine, Baltimore, MD. Fee: $150/MD/PhD/OD; $65/residents; $85/fellows. For information contact Nancy Cook at 410-328-5929, fax 410-328-6346, or e-mail ncook@aol.com. **Feb. 25**

Introduction to molecular & cellular research course, sponsored by The Endocrine Society at the Doubletree Hotel San Diego – Mission Valley, San Diego, CA. Credits: 22.5 Cat.1 AMA credits. Fee: $875/members; $975/nonmember; $695/students; (one-day rate/$250). **March 3–6**

Clinical infectious disease 2000: a management review for the practicing physician, sponsored by The Center for Bio-Medical Communication, Inc., at The Waldorf-Astoria Hotel, New York, New York. Credits: 18 Cat 1 AMA credits. Fee: $565/physicians; $425/ for allied health professionals and physicians-in-training. (after 2/1, $665 and $500, respectively.) **March 17–19**

PHYSICIAN'S RECOGNITION AWARD

For the month of September 1999, the physicians listed below received the American Medical Association (AMA) Physician's Recognition Award. Established in 1968, the award's purpose is to encourage physician participation in continuing medical education and to recognize those physicians who have voluntarily completed programs of continuing medical education.

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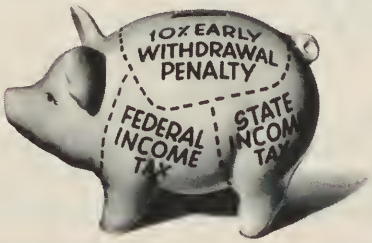
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